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THE SPECIFICNESS OF CERTAIN HEMOLYTIC STREPTOCOCCI

HONORARY CHAIRMAN'S ADDRESS

LUDVIG HEKTOEN, M.D.
CHICAGO

In the years since the organization of this section, great advances have been made in the study of the pathogenic streptococci. It is not my intention to review these advances in detail. The problem whether there are specific pathogenic streptococci has not been settled, and I wish to discuss briefly and in a general way only the question whether the streptococci that cause erysipelas and scarlet fever are distinct groups or species of streptococci.

There can be no question about the etiologic relationship of hemolytic streptococci to erysipelas and to scarlet fever, but there is lack of agreement on the relationship of these streptococci to each other and to hemolytic streptococci in general. There are two principal and opposing views concerning this relationship: One that all streptococci in question form one group in which are no members with fixed and distinctive pathogenic properties. According to this view there is really only one pathogenic hemolytic streptococcus that may cause different processes of disease in man, depending on variations in virulence, in toxigenesis, in resistance and in other conditions. The second view holds that there are distinct pathogenic groups among the hemolytic streptococci. At present the strongest claims for recognition as distinct pathogenic groups are made for the streptococci of erysipelas and of scarlet fever, but similar claims are made also for the streptococci of septic or epidemic sore throat and of puerperal fever, at least in some of the instances.

To go back briefly, new doubts about the unity of hemolytic streptococci arose when it was found that according to specific agglutination and opsonification the streptococci of scarlet fever and of erysipelas form what seemed to be distinct and closed groups. Then came the Dick discoveries that scarlet fever is caused by hemolytic streptococci, that scarlet fever like diphtheria is a toxin disease, and that the streptococci of scarlet fever and of erysipelas (Birkhaug) appeared to produce distinct toxins with specific antigenic and other properties. Here it may be emphasized that the toxin of scarlet fever streptococci is something more than just erythrogenic. It has wider action. In susceptible persons it causes vomiting and other symptoms of scarlet fever in addition to the redness of the skin.

From the John McCormick Institute for Infectious Diseases.
Read in the anniversary program by founders of the section before the Section on Pathology and Physiology at the Eighty-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1935.

But strenuous objections have been made to the conclusion that these streptococci are endowed with such immunologic and toxigenic specificness that they constitute distinct groups or species. Many results, sometimes bewildering, have been published as showing that pathogenic hemolytic streptococci produce the same toxins. It has been pointed out that in working with hemolytic streptococci, their toxins and their antigenic properties there is greater danger than seems to have been realized at all times of faulty methods. Tests with cultures of doubtful origin and purity and with unreliable and unstandardized toxins and serums are without any value. And the influence of dissociation on the specificness of the reactions of hemolytic streptococci has not received any consideration until just recently. It is quite probable that some investigations of streptococcus specificness have yielded results of uncertain value because unstable and dissociating strains were used. It appears certain that dissociation may modify the antigenic as well as other properties of the stable state of an organism.

The view that the streptococci of scarlet fever and of erysipelas are specific agents receives support from experiments with their toxins, from observations on their immunologic and cultural characteristics and from the relations of the two diseases to each other.

The skin tests with the toxins of erysipelas and of scarlet fever are significant. Birkhaug [1] found that the erythrogenic action of the erysipelas toxin was neutralized by immune erysipelas serum but not by scarlet fever antitoxin. I shall cite the results of G. F. Dick and G. H. Dick [2] more in detail because they have not received the consideration their significance demands. Carefully standardized materials were used. Of 500 persons of all ages, 36 per cent reacted to the scarlet toxin and 46.4 per cent to the erysipelas toxin. Of those insusceptible to the scarlet toxin, 42.1 per cent were susceptible to the erysipelas toxin. Of those insusceptible to the erysipelas toxin, 31.3 per cent were susceptible to the scarlet toxin. Of 100 convalescents from scarlet fever, the Dick test having turned negative, 52 per cent reacted to the erysipelas toxin. Twenty-four susceptibles to both toxins were immunized with the scarlet toxin and when the skin no longer reacted to that toxin the reaction to the erysipelas toxin remained positive. Finally, tests with antitoxic horse serums gave strictly specific neutralization. These results establish that the streptococci of scarlet fever and of erysipelas are distinct at least in the sense that they produce specific toxins. Differences in the antigenic powers of these toxins may explain why the immunity after scarlet fever is permanent while in erysipelas the immunity is more transitory.

1. Birkhaug, K. E.: Studies on the Biology of Streptococcus Erysipelatis: IV. Toxin Production of Streptococcus Erysipelatis, Proc. Soc. Exper. Biol. & Med. **23**: 201, 1925-1926.
2. Dick, G. F., and Dick, Gladys H.: Specificity of Soluble Toxins Produced by Hemolytic Streptococci, J. A. M. A. **93**: 1784 (Dec. 7) 1929.

The recent work by Ruth Tunnicliff [3] with stable as well as unstable strains of streptococci confirms the earlier results,[4] showing that the streptococci of scarlet fever and of erysipelas form distinct groups according to their agglutination and opsonification as well as according to their absorption of agglutinins and opsonins. It is interesting to note that streptococci from epidemic sore throat may not fall into either of these two groups. Tunnicliff [5] has shown also that the streptococci from each of these diseases form distinctive colonies on chocolate agar. On this medium the nondissociating scarlet streptococcus does not produce any changes in color, while streptococci from erysipelas and septic sore throat turn the chocolate agar a vivid green.

As I have mentioned elsewhere,[6] erysipelas and scarlet fever have been accepted as distinct diseases since scarlet fever was recognized. They do not overlap. Epidemiologically they have nothing in common. There are no records of epidemics in which some patients had scarlet fever, some erysipelas and some both diseases. In 1873 scarlet fever was introduced into the Faroe Islands. For fifty-seven years before, the islands had been free from the disease. In 1873-1875, 38.3 per cent of the population had scarlet fever, but there is no mention of any cases of erysipelas, which would be expected to occur under those circumstances if erysipelas and scarlet fever are caused by the same streptococcus. In rare instances, as in Henoch's and Heubner's cases, facial erysipelas has been contracted by physicians and nurses in attendance on patients with scarlet fever. I have not found any good record of the apparent transmission of scarlet fever by erysipelas patients.

The instances in which erysipelas has developed as a complication in scarlet fever are remarkably few. Of 5,416 cases of scarlet fever observed in recent years by Weaver,[7] six are recorded as complicated with erysipelas, or one in 900. Of 48,366 cases of scarlet fever in the Metropolitan Asylum Board Hospitals in London, 1,094 were complicated with diphtheria, 899 with chickenpox, 703 with measles, 404 with whooping cough, fifty-five with erysipelas (one in 880), eleven with typhoid and one with typhus fever. In 1920 Jenot [8] reviewed the reports and found that in somewhat more than 50,000 cases of scarlet fever, including the English cases just cited, the complication with erysipelas was many times less frequent than with diphtheria, chickenpox, measles or whooping cough, and of course even far less frequent again than the common secondary streptococcic infections in scarlet fever. As a complication of scarlet fever erysipelas is usually mild and in most cases it develops after convalescence is well under way.

It has been questioned whether scarlet fever can be caused solely by a streptococcus, because, "as a rule, scarlet fever confers lifelong immunity, and it is very rare for the same individual to be attacked twice, whereas streptococcus infections usually increase the susceptibility with respect to a fresh attack." [9] This and other doubts about the streptococcic nature of scarlet fever, because it does not correspond closely to other streptococcic diseases, would vanish on acceptance of the view that scarlet fever is caused by a specific streptococcus and is followed by a specific immunity. Right here it should be noted that the immunity to scarlet fever, whether from natural disease or from immunization with toxin, if, as is apparently the case, essentially antitoxic in nature, need not be expected to exclude local and other infections by the scarlet streptococcus either in the course of scarlet fever or independently.

As this matter now stands, it seems quite reasonable to regard scarlet fever and erysipelas, which certainly are distinct clinically, as distinct etiologically also and as caused each by a hemolytic streptococcus. It also seems reasonable to believe that continued work on the problems of streptococcus differentiation will yield new results of interest and practical value.

627 South Wood Street.

3. Tunnicliff, Ruth: Dissociation of Hemolytic Streptococci from Erysipelas, Scarlet Fever and Septic Sore Throat, J. Infect. Dis. **48**: 511 (June) 1931; Effect of Dissociation on Specificity of Hemolytic Streptococci, J. Bact. **29**: 37 (Jan.) 1935.

4. Tunnicliff, Ruth: Further Studies on the Specificity of Streptococci, J. A. M. A. **75**: 1339 (Nov. 13) 1920.

5. Tunnicliff, Ruth: The Various Colonies of Hemolytic Streptococci in Scarlet Fever, J. Infect. Dis. **49**: 357 (Oct.) 1931.

6. Hektoen, Ludvig: Advances in the Study of Streptococci, J. Bact. **19**: 57 (Feb.) 1930.

7. Weaver, G. H.: Medical Report of the Durand Hospital of the John McCormick Institute for Infectious Diseases for Twenty Years, Ann Arbor, Mich., Edwards Brothers, Inc., 1933.

8. Jenot, Marcel: De l'érysipèle au cours de la scarlatine, Thèse de Paris, 1920.

9. Kolle, W., and Hetsch, H.: Experimental Bacteriology, English Version edited by John Eyre, New York, Macmillan Company **1**: 418, 1935.

OBSERVATIONS ON THE CLINICAL COURSE OF CORONARY ARTERY DISEASE

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AND
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An inadequate circulation to the myocardium, particularly of the left ventricle, is primarily responsible for the cardiac disability in coronary artery disease. This varies in extent and distribution with the size and number of vessels involved by the sclerotic process and whether they are partially or completely occluded. Moreover, it may develop gradually or occur abruptly as from the sudden closure of one of the larger coronary arteries. In view of the great variation in these and other factors, it is not surprising that the clinical manifestations of coronary artery disease are varied and that sudden death may be the first intimation of the disease in some, whereas others may live for years after the appearance of the first symptom.

This report is based on the study of 420 cases of coronary artery disease in which the progress of the cardiac disability was analyzed with reference to the character of the clinical expression and their significance from the standpoint of further insults to the coronary circulation. In forty-four instances the clinical interpretations were checked by postmortem examination.

These cases were divided into five groups on the basis of the initial or dominant initial symptom; namely, shortness of breath, paroxysmal dyspnea, severe anginal pain, angina of effort and pain in the epigastrium or chest of an indefinite nature. The number in each of these groups and the distribution as to sex is indicated in chart 1.

From the Department of Internal Medicine, State University of Iowa College of Medicine.
Read in part before the meeting of the Association of American Physicians, Atlantic City, N. J., May 1, 1934, and the meeting of the American Heart Association, Cleveland, June 11, 1934.

The following cases are illustrative of each of these groups both with reference to the character of the onset and on the basis of our conclusion concerning the progression of the coronary artery disease:

GROUP 1.—F. M., a man, aged 60, was admitted to the University Hospital, Sept. 27, 1932. Shortness of breath first appeared in 1920. The patient was working in a battery station and noticed that he became winded easily when he lifted a battery or crawled under a car. There was no particular change in his condition until the spring of 1923. He then had an attack of severe substernal pain radiating to the left shoulder and down the left arm, which lasted for several hours and required morphine for relief. Following this he became very dyspneic, and edema appeared in the extremities. He was confined to bed for three months. Thereafter he became short of breath rather easily and occasionally had angina of effort. In 1931 he had another attack of precordial pain quite similar to that in 1923. This attack was also followed by congestive failure. There was considerable improvement in the condition but the edema soon returned and the patient presented advanced congestive failure when admitted to the University Hospital.

The heart was very large and there was an auricular fibrillation. The systolic blood pressure was 148 and the diastolic 98. An electrocardiogram showed bundle-branch block, auricular fibrillation and frequent premature beats arising from different foci. The patient died on the fifth day following admission.

We believed that this patient undoubtedly had advanced coronary artery disease and concluded that there had been an occlusion of one, and possibly two, of the larger vessels.

The heart weighed 850 Gm. There was an extensive sclerosis of the coronary arteries with complete occlusion of the anterior descending branch of the left coronary artery. In addition to the large area of fibrosis resulting from the obstruction of this vessel, scars of varying size but much smaller than the one mentioned, were encountered elsewhere in the myocardium, particularly of the left ventricle.

GROUP 2.—L. G., a man, aged 65, admitted to the University Hospital, July 20, 1929, had experienced intense dyspnea lasting for more than an hour, in October 1928 after running about a block for a train. Shortly following the recovery from this episode he began to notice shortness of breath. This became more evident in January 1929 and he soon began to have difficulty in sleeping, from paroxysmal dyspnea. He finally reached the stage at which he was compelled to sit up continually. Chest pain of an indefinite nature but never in severe form occurred from time to time and occasionally was transmitted to the left shoulder.

When he was admitted to the University Hospital there was orthopnea and some edema of the lower extremities. The area of cardiac dulness was considerably increased both to the right and to the left. The tones were of poor quality, and an occasional premature beat was heard. The systolic blood pressure was 160 and the diastolic 80. Moist râles were present in the bases of the lungs, and the margin of the liver extended about three fingerbreadths below the costal margin. The electrocardiogram showed a bizarre QRS group of low amplitude.

The patient gradually improved and on August 22 was discharged from the hospital. The symptoms, however, soon returned. He was back again in October and finally died from cardiac failure in June 1930, during his third stay in the hospital. During the period of our observation, paroxysmal dyspnea was a prominent feature.

The onset and subsequent course of the cardiac disability pointed to coronary artery disease with occlusion of one of the larger branches in October 1928. The signs of recurring attacks of left ventricular failure dominated the clinical picture until the third admission to the hospital.

The heart weighed 640 Gm. There was an advanced sclerosis of the anterior descending and circumflex branches of the left coronary arteries, with complete occlusion of the former branch. The myocardium of the apical region of the left ventricle was almost entirely replaced by fibrous tisue. Many small scars were found elsewhere in the myocardium of the left ventricle.

GROUP 3.—E. A., a man, aged 61, admitted to the University Hospital Dec. 4, 1928, stated that he was well until a severe attack of substernal pain ten years before. He recalled that he was very short of breath and, in attempting to walk to the house, fainted. The pain lasted about one hour and required morphine for relief. He was permitted to be up the next day but noticed that he was short of breath for about two weeks. He had no further trouble, however, for four years, or until about six years before admission and in the meantime was able to do the usual work about the farm without any difficulty. While picking corn he was again seized by very severe pain in the chest and shortness of breath. The pain was so severe that he was afraid that he would die before the physician arrived. Following this, edema of the feet and legs developed. This disappeared during a period of two weeks in bed. Thereafter he became short of breath rather easily and every few months was compelled to go to bed for a period of rest. In October 1928 the breathlessness increased and the edema became more marked.

There was generalized anasarca when he was admitted to the University Hospital. The heart was very large and the cardiac tones were distant and poorly differentiated. A musical systolic murmur was heard over the apical region. The rhythm was that of auricular fibrillation. The systolic blood pressure was 144, the diastolic 70. Electrocardiogram showed a partial bundle-branch block and auricular fibrillation.

The patient did not respond to treatment and died after several months in the hospital. We concluded that he had had an occlusion of two of the larger coronary arteries. The first occurred in 1918 and the second in 1922. He withstood the first attack without any significant lasting impairment in the cardiac function, as evidenced by the fact that he was able to do the usual work on a farm for a period of four years or until the second coronary occlusion.

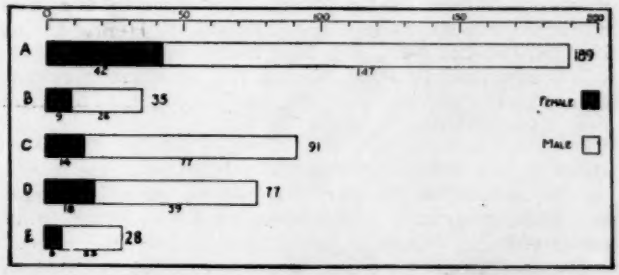

Chart 1.—Coronary artery disease: Initial symptoms in 420 cases. *A*, shortness of breath; *B*, paroxysmal dyspnea; *C*, severe anginal pain; *D*, angina of effort; *E*, indefinite pain.

The heart weighed 625 Gm. The right coronary artery and the anterior descending branch of the left coronary artery were completely occluded a short distance from their origin.

GROUP 4.—A. K., a man, aged 50, admitted to the University Hospital, June 9, 1930, was apparently in good health until an automobile accident in August 1929. He was badly shaken up by the accident and required several weeks for recovery. In November 1929 he began to notice substernal pain with certain physical activities and excitement. This gradually progressed and when we first saw him the history was typical of angina of effort. The results of the examination of the heart were entirely negative aside from a rather tall T wave in leads 2 and 3 and a prominent Q wave in lead 3 of the electrocardiogram.

The condition improved somewhat but he continued to have an occasional attack of pain. In May 1931 the pain began one evening while the patient was sitting quietly on his porch. It soon became very severe, lasting until the next day, and repeated administration of morphine was required before complete relief was obtained. The pain, according to the patient, was identical in every respect to that of his previous attacks of angina of effort except that it was more severe and more lasting. The patient was confined to bed for twelve days. Three days later he had a cerebral accident followed by weakness of the right arm. This was the occasion for the second admission to the hospital, June 26, 1931.

There was at this time some shortness of breath and the heart was definitely increased in size. The cardiac rate was increased, the sounds were of poor quality and a gallop rhythm was noted. The systolic blood pressure was 102, the diastolic 74. Striking

alterations had occurred in the electrocardiogram. The amplitude of the QRS group was greatly reduced and the duration increased. There was a sharply negative T wave in leads 2 and 3, with some alteration in the RT segment of all leads. The shortness of breath disappeared during the two months stay in the hospital, but the persistence of the elevated cardiac rate and the gallop rhythm pointed to an extensively damaged heart. During this time there was very little change in the electrocardiogram.

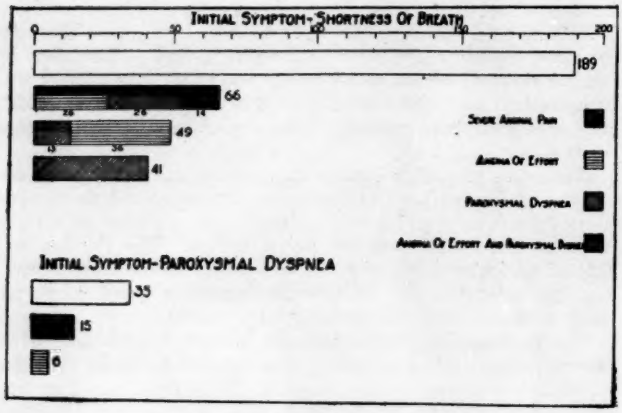

Chart 2.—Subsequent course.

Within a few weeks after his discharge from the hospital the shortness of breath returned and soon paroxysmal dyspnea appeared. The patient was again admitted to the hospital, Dec. 27, 1931, and died a few days later from a pulmonary embolus.

When the patient was examined in 1930 there was no evidence of structural changes in the heart except as suggested by alteration in the electrocardiogram. The history, however, indicated the presence of a sclerosis of the coronary arteries. The severe attack of pain in May 1931 and the subsequent course justified the diagnosis of the occlusion of one of the larger branches of the coronary arteries resulting in extensive change to the myocardium.

The heart weighed 460 Gm. There was an extensive sclerosis of the coronary arteries. The anterior descending branch of the left coronary artery was completely occluded, resulting in the formation of a large area of fibrosis involving the apical region of the left ventricle, the interventricular septum and a small section of the right ventricle. Scattered areas of fibrosis were encountered elsewhere throughout the myocardium of the left ventricle.

GROUP 5.—L. W., a man, aged 67, admitted to the University Hospital, Jan. 14, 1931, stated that for the past three years he had been troubled with gas on the stomach. In October 1929 he was run over by a car passing over his lower ribs and epigastrium. He was in bed for five weeks. Following the accident there was a progression of the indigestion, and in August 1930 definite pain was noted. Later the pain extended up on the chest and was accompanied by a sensation of pressure. The day before admission to the hospital the patient was taken with a more severe attack of pain, lasting all night. There was still some distress when he was admitted to the hospital the following afternoon. The later appearance of a pericardial friction rub and the occurrence of characteristic alterations in the electrocardiogram verified the diagnosis of coronary occlusion. The patient was retained in the hospital for six weeks and when discharged was free from cardiac symptoms.

The distress in the beginning was very indefinite and confined for the most part, if not entirely, to the epigastrium. Later, however, the extension to the chest, the associated feeling of constriction and finally the coronary occlusion established the diagnosis of coronary artery disease.

In the first group the shortness of breath frequently persisted for months and often for years before further evidence of an impaired cardiac function developed. The onset in group 2, classified as paroxysmal dyspnea, was characterized by the sudden appearance of intense dyspnea in an individual who previously had been free from cardiac symptoms. These attacks often occurred at night but in many instances appeared during the day following some form of exertion. They might last for several hours and were invariably followed by a reduction in the exercise tolerance or other symptoms directing attention to the heart. In group 3, in which the dominant initial symptom was severe anginal pain, the severity and duration of the pain and the subsequent course were such that one would not hesitate to make the diagnosis of coronary occlusion. The same criteria relative to the character and significance of this particular manifestation was adhered to in the analysis of the subsequent course of this series of cases except in those under observation when other information was available. Group 4, beginning with angina of effort, included only those patients whose history was in every respect typical of the disorder. Those patients in whom there was doubt concerning the nature of the pain were placed in group 5. In many of them the discomfort was confined for the most part to the epigastrium.

The subsequent developments in groups 1, 2, 3 and 4 are indicated in charts 2 and 3. The later course of group 5 indicated that the pain was anginal in nature from the onset and consequently these patients were later included in group 4. It is to be noted that shortness of breath on exertion was the initial symptom in 189 (59 per cent). The subsequent course in this group was of particular interest to us. One might expect that a large percentage of these patients would gradually pass into congestive failure, but our analysis shows that in 156 (82 per cent) the further progression of the cardiac disability was evidenced by either angina of effort, attacks of severe anginal pain (indicating a coronary occlusion), paroxysmal dyspnea or a combination of these manifestations. Pain was a prominent feature in that it occurred in 115 (60 per cent). In sixty-six (34 per cent) it was on the basis of coronary occlusion, whereas in forty-nine (25 per cent) it was

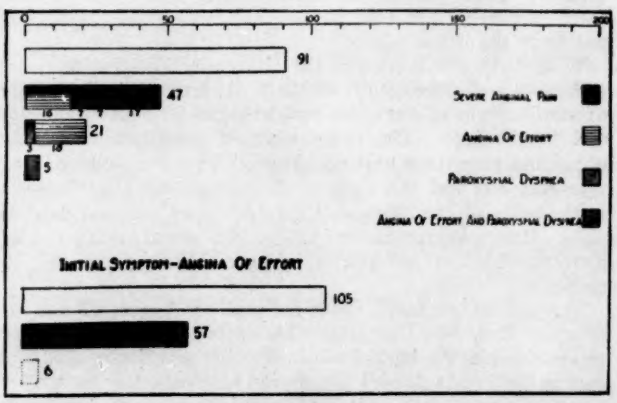

Chart 3.—Subsequent course.

that of angina of effort. When these patients were later seen by one of us or admitted to the hospital, 107 (56 per cent) presented congestive failure, usually in an advanced form. Pain, however, was still rather conspicuous, since twenty-one sought medical advice primarily because of angina of effort and twenty because of the immediate or later effects of coronary occlusion.

The clinical course of the other groups was quite similar to that of the foregoing, varying only in the incidence of the different manifestations. In the group with the onset of severe and prolonged pain, forty-

seven (52 per cent) had subsequent attacks of a similar character. Angina of effort and paroxysmal dyspnea were likewise prominent in the subsequent course of the patients in this group. Even in the group in which the onset was with paroxysmal dyspnea, fifteen (43 per cent) later had attacks of severe chest pain characteristic of coronary occlusion.

The composite clinical picture presented by groups 2, 3 and 4 were still quite similar to that of group 1 when the patients were admitted to the hospital (chart 4).

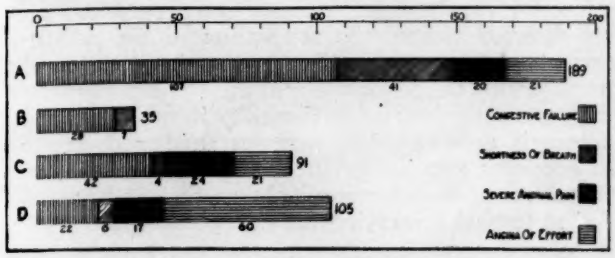

Chart 4.—Cause of admission to hospital: *A*, shortness of breath; *B*, paroxysmal dyspnea; *C*, severe anginal pain; *D*, angina of effort.

There was a higher incidence of congestive failure in groups 2 and 3. Pain was still a prominent manifestation in groups 3 and 4.

Eighty-five of this series of patients died while in the hospital and forty-four came to necropsy. The clinical analysis and the postmortem observations with reference to the coronary arteries are shown in chart 5. The clinical study justified the diagnosis of an occlusion of one or more of the larger branches in twenty-six instances. At necropsy there was in every instance a disseminated fibrosis from the occlusion of smaller branches, and in twenty-eight one or more of the larger vessels were obstructed. In the two in which the occlusion of one of the larger branches was not diagnosed before death the onset was with paroxysmal dyspnea, and in one specific mention was made in the record to the effect that the patient had never had substernal pain.

COMMENT

In the analysis of the foregoing series of cases the intimate relationship between angina of effort, severe anginal pain (coronary occlusion) and paroxysmal dyspnea was one of the outstanding features. Either of these manifestations might occur alone in the beginning of the cardiac disability, but sooner or later they were commonly combined to a varying extent in the same individual. This would indicate that these manifestations were merely different expressions of the same basic factor; namely, a deficiency in the coronary circulation.

The data in chart 3 show that, in the group in which the onset of the cardiac disability was initiated by a coronary occlusion, approximately 50 per cent later gave a history of angina of effort. The incidence of angina of effort was also high in the other groups following a coronary occlusion. Moreover, in the group in which the initial symptom was represented by angina of effort, fifty-seven (54 per cent) subsequently had an attack of very severe pain indicative of an obstruction of one of the larger vessels. It is well to recall that before the identification of the syndrome of coronary occlusion the latter was included in the description of angina pectoris. In recent years there has been a tendency to lose sight of what Parkinson [1] has referred to as the essential unity of angina pectoris and coronary occlusion. It is believed that we are justified in assuming that angina of effort, particularly in the type of case under consideration, is generally indicative of a deficiency of the coronary circulation. In many instances the deficiency in the circulation responsible for the angina results from the obstruction of a larger vessel. The same condition, in our opinion, often follows the closure of smaller branches. A more detailed analysis of certain of our cases in which at first the angina of effort was apparently the initial symptom disclosed a history very suggestive of coronary occlusion. The first attack of pain in these particular patients was either more severe and lasting than the subsequent attacks or occurred under unusual circumstances for angina of effort, such as while the individual was at rest and completely relaxed. Further support of this is provided in many by the occurrence of a sharply negative T wave, a prominent Q wave or perhaps a broad and bizarre QRS group in the electrocardiogram. This conception has a significant bearing on treatment, for if these occlusions are recognized and therapy is directed toward the restoration of the coronary circulation it is possible that the angina of effort may be prevented or postponed.

The relationship between coronary occlusion and paroxysmal dyspnea is as intimate as that of coronary occlusion and angina of effort. These conditions, likewise, may occur independently or be combined in the same individual. In the typical case of coronary occlusion, pain is the outstanding feature and often there is surprisingly little dyspnea. In others, however, even though the pain is severe and lasting, the dyspnea is a conspicuous aspect of the clinical picture. Finally, there is a smaller group in which the dominant symptom is that of intense air hunger. While there is usually a varying degree of tightness or heaviness of the chest,

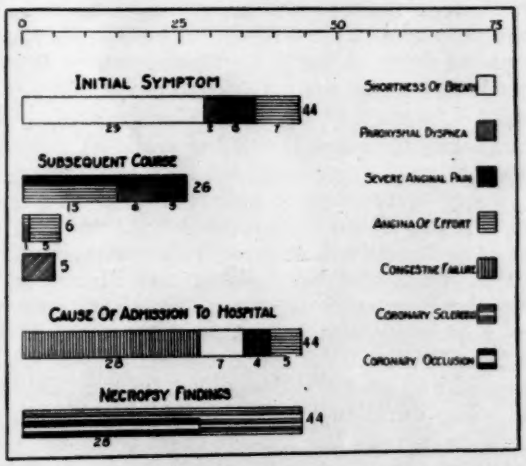

Chart 5.—Necropsy cases.

the respiratory distress far overshadows that of pain. These attacks constitute what is generally known as paroxysmal dyspnea (cardiac asthma). They are indicative of an abrupt and profound disturbance in the function of the left ventricle or acute left ventricular failure.[2] When paroxysmal dyspnea occurs as the initial manifestation of a cardiac disability in coronary artery disease it is invariably dependent on a sudden

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and extensive reduction in the coronary circulation, as from the obstruction of one of the larger coronary vessels. It appeared as the initial symptom in thirty-five (8.5 per cent) of our cases. Two of these later came to necropsy and the heart in each showed a large healed infarct. In the group beginning with shortness of breath the subsequent progression of the cardiac disability was evidenced by the appearance of paroxysmal dyspnea in forty-one (21.5 per cent). This type of clinical manifestation, as will be noted in our cases, occurred commonly during the later stages of the coronary artery disease regardless of the character of the onset. At this stage the functional efficiency of the left ventricle may be so reduced that temporary failure is readily precipitated. Under these circumstances, however, the appearance of paroxysmal dyspnea may mean a further reduction in the coronary circulation in many instances, perhaps through the closure of a small vessel. In certain of our cases this possibility was supported by the occurrence of consecutive alterations in the electrocardiogram.

It is well to bear in mind that the coronary circulation is frequently capable of compensating to a remarkable extent to the major insults incident to a sclerotic process. In the first place it is generally known that an advanced sclerosis of the coronary arteries may be present without cardiac symptoms. Furthermore, an individual may live for years after the onset of symptoms. We have recently observed a patient in whom the angina of effort first appeared seventeen years before his death at 74 years of age. During the past few years he had experienced many attacks of severe and lasting pain pointing to the possibility of repeated coronary occlusion. At necropsy there was a complete occlusion of the anterior descending branch of the left coronary artery and extensive sclerosis of the other main branches. In addition to the large scar from the obstruction of the anterior descending branch of the left coronary artery, the left ventricle presented numerous smaller areas of fibrosis. These changes illustrate in a striking manner the remarkable adaptability of the coronary circulation in this particular instance. There are numerous instances in the literature on angina of effort of patients living from ten to fifteen, and a few even twenty years or more after the onset of the disorder.[3] Many if not all of these no doubt had had coronary occlusion not necessarily, however, involving one of the main branches. White and Bland,[4] in discussing the prognosis of angina of effort, state that coronary occlusion was frequently encountered in their series of cases but that it did not affect appreciably the duration of life, provided the patient survived the acute attack. The duration of the cardiac disability in our series of cases from the time of onset until seen by us ranged from a few weeks to twenty years. In eighty-five (20 per cent) the cardiac disability dated back five years or longer. According to our clinical interpretation, 311 (74 per cent) of our series had had an occlusion of one of the larger coronary vessels. Of these, we believe that there were 105 in which more than one of the larger branches were occluded. Furthermore, the history of many of these patients indicated that they withstood their attack and later had a fairly efficient heart, even though they were permitted to be up and about the next day or were allowed this privilege within a few days following the coronary accident.

While an individual may withstand the occlusion of one of the larger coronary arteries and live for years afterward, even though he may have received little or no treatment except perhaps morphine for the control of the pain, the aftercare is commonly the deciding factor in determining the extent of the resulting cardiac disability. This may mean the difference between an irreparably damaged heart and one in which the subject is free from symptoms. The results from rest and therapy directed toward the restoration of the coronary circulation are occasionally striking even after the development of congestive failure. Any significant progression of the cardiac disability in coronary artery disease is generally dependent on further damage to the coronary circulation. If this is borne in mind and the patient is treated accordingly, much may be accomplished toward conserving the cardiac function.

SUMMARY

A series of 420 cases of coronary artery disease was analyzed with particular reference to the character and significance of the clinical manifestations. These cases were divided into five groups on the basis of the initial or the dominant initial symptom; namely, shortness of breath, paroxysmal dyspnea, severe anginal pain, angina of effort, and pain of an indefinite nature. The subsequent developments were quite similar and varied only in the incidence of the different manifestations. In the vast majority, further progression of the cardiac disability was evidenced by either angina of effort, attacks of severe anginal pain, paroxysmal dyspnea or varying combinations of these. The intimate relation of these clinical manifestations was one of the outstanding features in the progression of the cardiac disability in this series of cases. This would indicate that they are merely different expressions of the same basic factor; namely, a deficiency of the coronary circulation.

The attacks of severe anginal pain were typical of coronary occlusion. According to our analysis, 311 (74 per cent) of our cases presented an occlusion of one or more of the larger coronary vessels. In the forty-four cases that came to necropsy there was an obstruction of one of the main branches in twenty-eight. These pathologic changes were predicted in twenty-six, and in all there was a history of an attack of severe anginal pain. Angina of effort commonly follows a major coronary accident, and it is believed that it is frequently precipitated by the obstruction of smaller branches. The occurrence of paroxysmal dyspnea as the initial manifestation of a cardiac disability, particularly in the type of case under consideration, is invariably dependent on the abrupt closure of one of the larger coronary vessels. Subsequent attacks or those occurring during the later course of coronary artery disease may mean a further reduction in the coronary circulation, possibly in many instances through the obstruction of the smaller branches.

The coronary circulation frequently shows remarkable ability in compensating for the insults incident to a sclerotic process. The extent of the resulting cardiac disability, however, is greatly influenced by treatment. It is thus important that the possibility of further damage to the coronary circulation is considered whenever there is a significant progression of the cardiac disability and that the patient is treated accordingly.

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THE DIFFERENTIAL DIAGNOSIS IN PATIENTS ENTERING THE HOSPITAL IN COMA

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In the year 1933, 1,167 patients, or 3 per cent of the total hospital admissions, entered the Boston City Hospital in coma. The size of this figure is startling and certainly is greater than is generally appreciated. Since there are many causes of coma which require emergency treatment to save life, for example, diabetes, hyperinsulinism, poisoning, traumatic shock, exsanguination, subdural hematoma, brain tumor, meningitis and eclampsia, the importance of immediate diagnosis is evident.

Textbook articles on coma [1] discuss the subject in a general and abstract way without special regard to the practical problems involved. The literature in the journals [2] is on the whole subject to the same criticism, although a few authors [3] have attempted to aid the practitioner in the diagnosis of coma of unknown cause. In no case, however, have the actual conditions found in comatose patients been analyzed with the purpose of obtaining information of practical diagnostic value.

The records of the 1,167 admissions in coma to the Boston City Hospital in the year 1933 have been analyzed, and the frequency of the various causes for coma has been previously reported.[4] The present paper is a critical analysis of these causes with the purpose of determining criteria of use in the diagnosis of coma. The various conditions that produced coma in our 1,167 cases are discussed in their order of frequency. A large proportion of these cases were seen by one or the other of us in our capacity as neurologic consultants.

CONDITIONS PRODUCING COMA

Alcoholism (690 cases, 59.1 per cent of total cases of coma; mortality in this group 2 per cent).—Individuals under the influence of alcohol are brought to the City Hospital from all parts of the city, usually by the police ambulance. There were 2,079 admissions for alcoholism (6 per cent of the total admissions) in the year 1933. Six hundred and ninety of these 2,079 cases, or 33 per cent, were admitted to the hospital in coma. The records of most of the alcoholic patients are inadequate, and the data regarding alcoholic coma are therefore subject to error. Many reentries are included in this group.

Usually a history of alcoholism was obtained, not on entry but later. The typical patient had a flushed face, injected throat and conjunctivae, diminished or absent reflexes, and an alcoholic odor to the breath. Minor injuries about the head were present in 11 per cent of our 690 cases and minor injuries elsewhere about the body in 2 per cent. Vomiting was common, and convulsions occasionally occurred. Laboratory examinations were negative. In the fatal cases the coma was usually more complete from the outset, and convulsions were more common. In these cases the physical examination was likely to show some further abnormality such as cyanosis, enlarged heart, heart sounds irregular or of poor quality, pulmonary râles, low blood pressure, high blood white cell count or nonprotein nitrogen.

The chief diagnostic features of alcoholic coma were the alcoholic odor to the breath, the hyperemia of the face, throat and conjunctivae, and the absence of other abnormalities.

Trauma (152 cases, 13 per cent of total cases of coma; mortality in this group 31.5 per cent).—A history of trauma was available on entry in more than 90 per cent of these cases. Seven per cent of the patients were under the influence of alcohol at the time the trauma occurred. Three per cent were epileptic patients injured in a convulsion. In children, a history of vomiting following the accident was considered important as probably signifying increased intracranial pressure. Injury to the head was the cause of the coma in 90 per cent in this group, while chest, pelvis and spinal cord injuries made up the remaining cases. Among the patients with head injuries, twelve had a subdural and three an extradural hemorrhage.

In the physical examination, evidence of injury was present in every case. Serious prognostic signs were compound fracture of the skull, bleeding or drainage of cerebrospinal fluid from the nose or ear, and signs of surgical shock. In one third of the cases there was some abnormality in temperature, pulse or respiration, the usual conditions observed being a low temperature and high pulse and respiration. In one fourth of the cases the pupils were abnormal. Significant neurologic signs were present in the cases of brain or spinal cord injury. In 43 per cent of the patients with head injuries a fractured skull was demonstrated by roentgen examination. By lumbar puncture bloody cerebrospinal fluid was obtained in sixty-two cases, and in forty-two the pressure of the fluid was increased.

The diagnosis of traumatic coma was not difficult, because of the history of accident and the evidences of injury on examination. In the further differentiation of the type of injury, roentgenograms and lumbar puncture were helpful. The differential diagnosis between a contusion or laceration of the brain and an extradural or subdural hemorrhage may be very difficult. This subject has been fully discussed recently by Munro.[5]

From the Neurological Unit, Boston City Hospital, and the Departments of Neuropathology and Neurology, Harvard Medical School.

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Cerebral Vascular Lesions (118 cases, 10 per cent of total cases of coma; mortality in this group 77 per cent).—The history in these cases was valuable. In 49 per cent the onset was known to be abrupt. Other helpful points in the history were onset with convulsions, previous high blood pressure or heart disease, and previous "shocks" or "strokes." The age of the patient was important. More than 90 per cent were over 40 years of age, and 75 per cent were over 50. The following signs were present on entry: complete or partial hemiplegia in 57 per cent, stiffness of the neck in 13 per cent, convulsions during the examination in 9 per cent, temperature increased in 9 per cent, temperature decreased in 31 per cent, respirations increased in 24 per cent, and abnormalities in respiratory rhythm in 30 per cent. The blood pressure was elevated in 50 per cent of the cases; the pupils were abnormal in 70 per cent. The physical examination occasionally showed abnormalities in the heart, lungs, eyegrounds, pulse, Babinski's toe sign and Kernig's leg sign. Cyanosis was not uncommon and peripheral edema was rarely present. The urine was abnormal in thirteen cases, and the Kahn test of the blood was positive in six. Of the seventy-eight patients in this group who had a lumbar puncture, forty-three had a high pressure and forty-two had grossly bloody fluid.

The clinical diagnoses, arrived at before discharge, of the 118 cases in this group were: cerebral hemorrhages 35 per cent, cerebral thrombosis 33 per cent, cerebral embolus 4 per cent, and primary subarachnoid hemorrhage 3 per cent. In 18 per cent the data in the records were not sufficient to make possible a differential diagnosis as to the type of cerebral vascular lesion. Of the five cases of cerebral embolus, four showed auricular fibrillation and one a severe rheumatic carditis. The four cases of primary subarachnoid hemorrhage gave no evidence of a focal cerebral lesion but presented a grossly bloody cerebrospinal fluid. Two of these patients had stiffness of the neck, and a history was given of an abrupt onset of headache in the other two. The differential diagnosis between the various types of cerebral vascular lesions has been discussed by Aring and Merritt.[6]

The most important points in the diagnosis of coma due to cerebral vascular lesions were the history of sudden onset of the coma, the age of the patient, the presence of a hemiplegia, and an increased blood pressure or auricular fibrillation. The lumbar puncture of a bloody fluid under an increased pressure was of great aid in the diagnosis of intracerebral or subarachnoid hemorrhage.

Poisoning (thirty-three cases, 3 per cent of total cases of coma; mortality in this group 9 per cent).—The history of attempted suicide was frequently obtained in cases of coma due to acute, nonalcoholic poisoning. In sixteen of these cases the history of ingestion of barbital or its derivatives was obtained. Twelve patients had been exposed to carbon monoxide, deliberately or accidentally, in a garage or because a gas stove had blown out. In the five remaining cases, a history was obtained of the ingestion of one of the following drugs: bromide, potassium permanganate, nitrobenzene, compound solution of cresol, and sodium nitrite.

The physical examination and laboratory data in the patients in the barbital group were usually normal. After these patients awoke, which usually occurred within twenty-four to forty-eight hours, they frequently had for a few days slurred speech, nystagmus, tremor of the hands, and absent tendon reflexes. Rarely a skin rash appeared. There was one fatality in this group.

The patients with carbon monoxide poisoning were usually in light coma and had a strong odor of illuminating gas on their breath. When given a mixture of oxygen and carbon dioxide to breathe, they often recovered consciousness quickly. The face sometimes had the characteristic bright "cherry red" color. The temperature was uniformly subnormal and the pulse high. The tendon reflexes were frequently increased, Babinski's toe sign was positive, and rarely decerebrate rigidity was present. The white blood cell count was usually increased. Lumbar puncture was done in three cases. The initial pressure was 200 mm. of water in one but was well within normal limits in the other two. There were no abnormalities in the spinal fluid. Spectroscopic examination of the blood gave the characteristic absorption bands of carbon monoxide in two cases and in two cases did not. There were no fatalities in this group.

The patient with bromide poisoning had an increased amount of bromide in the blood and spinal fluid. The patient with potassium permanganate poisoning had potassium permanganate in the vomitus and stomach washings. The patient with compound solution of cresol poisoning had burns of the mouth and face, and there was the characteristic odor of compound solution of cresol in the vomitus and stomach washings. This patient died. The patient who ingested sodium nitrite had an ashen gray cyanosis with purplish black lips and tongue, a high blood hemoglobin, and on spectroscopic examination the blood contained methemoglobin. The patient who took nitrobenzene died in shock.

The history was the most important point in the diagnosis of coma due to nonalcoholic poisoning. Of importance also was the odor of the breath, the odor, appearance and chemical analysis of the stomach washings, and, in carbon monoxide poisoning, the "cherry red" color of the skin and subnormal temperature.

Epilepsy (twenty-eight cases, 2.4 per cent of total cases of coma; mortality 0).—The history on entry of the abrupt onset of the coma preceding or accompanying a convulsion was obtained in all but one of these cases. In three, excessive alcoholism preceded the attack. In most of the cases in this group, a history of repeated seizures in the past was obtained. Thirteen of the patients had convulsions while being examined. Two patients were in status epilepticus, with high temperature and increased cardiac and respiratory rates. Fresh lacerations, frothing at the mouth, and old scars on the tongue were present in six cases. Babinski's toe sign was positive in four cases. The physical examination was otherwise not remarkable.

The diagnosis of coma following an epileptic convulsion was made on entry in almost every case on the basis of the history obtained from friends or relatives accompanying the patient. The occurrence of convulsions during the physical examination, and wounds or scars on the tongue were of assistance in establishing the diagnosis.

Diabetes (twenty cases, 1.7 per cent of total cases of coma; mortality in this group 55 per cent).—Diabetic coma is not yet rare. Of the twenty cases in this series, three represent the same patient on different admission. In thirteen cases a history of diabetes was

6. Aring, C. D., and Merritt, H. H.: The Differential Diagnosis Between Cerebral Hemorrhage and Cerebral Thrombosis, Arch. Int. Med., to be published.

obtained on entry. There had been recent dietary indiscretions in four, a recent infection of the upper respiratory tract in three, and boils in three. In one case, in which diabetes had not been previously diagnosed, a history was obtained of recent polydipsia and an increased fondness for sweets.

On examination the following signs were noted: temperature elevated in four (associated with an infection) and subnormal in ten, pulse increased in seventeen, respirations increased in nine, Küssmaul breathing in eleven, shallow breathing in one, eyeballs abnormally soft in seven and normal in two, acetone on the breath in fourteen, throat inflamed in nine, dehydration in fifteen, and moist râles at the lung bases in four. The urine showed the presence of sugar in every case, the white blood cell count was increased in seven, and the red cell count was high in one case. The blood nonprotein nitrogen was 102 mg. per hundred cubic centimeters in one case, associated with dehydration. The blood sugar was high in fifteen cases, was normal in one, and, after insulin, was low in one. A lumbar puncture was done in one case, and the initial pressure was found to be zero. (This finding of decreased intracranial pressure parallels the decreased intra-ocular pressure, both being part of the picture of dehydration.)

The diagnosis of diabetic coma was strongly suggested by the history on entry in more than half the cases in this group. Physical changes of diagnostic significance were subnormal temperature, increased pulse, Küssmaul respirations, soft eyeballs, acetone on the breath, and dehydration. Laboratory observations of diagnostic importance were glycosuria and hyperglycemia.

Meningitis (twenty cases, 1.7 per cent of total cases of coma; mortality in this group 100 per cent).—It is not generally realized that meningitis is as common a cause of coma among hospital entrants as diabetes. Of the cases reported here, ten were of children under 10 years of age. There was a history of injury in four. Important symptoms in the history were vomiting ten cases, convulsions nine cases, infection of the upper respiratory tract eight cases, fever seven cases, headache six cases, mental disturbance five cases, ear trouble five cases, stiff neck three cases, chills two cases, exophthalmos associated in two cases with sinus thrombosis, and in one case each abdominal pain, diplopia, and paralysis of an arm. In the past history there was tuberculosis in one patient; another was a nursing infant whose mother had active tuberculosis; one patient had recently picked a pimple on his nose, another had just been operated on for cataract.

On examination the temperature was high on entry in most of the cases, and the pulse and respirations were increased. There was acetone on the breath in one case. Choked disks were present in three cases. Although stiffness of the neck was the rule, it was absent in three cases on entry. There was redness of the throat in six cases. The Kernig leg sign was positive in eleven cases, negative in six, and not mentioned in three. The Babinski toe sign was positive in seven cases, negative in three and not mentioned in ten cases. In three cases a bulging fontanel was observed. Opisthotonos was present in one case. Roentgen studies of the chest in two cases demonstrated miliary tuberculosis, in one advanced tuberculosis and in one lobar pneumonia. The white blood cell count was high in five cases and normal in six. The blood culture was positive for pneumococci in three cases and for staphylococci in one. Lumbar puncture gave results of paramount importance, the spinal fluid being grossly abnormal in every case in which it was examined. A lumbar puncture was not performed in four cases. The spinal fluid pressure was increased in twelve, normal in one and not recorded in three cases. Xanthochromia was present in two cases. All the fluids were purulent. The cellular content was recorded in thirteen, eight of which contained more than 1,000 white cells per cubic millimeter. Organisms were found on examination of stained smears of the sediment in seven cases. Cultures of the fluids were positive in ten cases: pneumococci in seven cases, and streptococci, staphylococci and meningococci in one case each. The spinal fluid sugar was found to be low in twelve cases, the chlorides were low in ten cases, and the protein was high in eleven cases.

In the diagnosis of meningitic coma, the age incidence was of importance, since half the patients were children under 10 years of age. Symptoms pointing to infection about the head, increased intracranial pressure or meningeal irritation were significant in the history. Valuable diagnostic physical signs were fever, stiffness of the neck, positive Kernig's leg sign and Babinski's toe sign, and a bulging fontanel in infants. The spinal fluid was grossly abnormal in every case in which it was examined. The white cells and protein in the spinal fluid were increased and the sugar and chloride decreased. In most cases organisms were found either by smear or by culture.

Pneumonia (twenty cases, 1.7 per cent of total cases of coma; mortality in this group 90 per cent).—Pneumonia is not mentioned in textbooks as one of the diagnoses to be considered in cases in which coma is a presenting sign. Yet pneumonia is as common as diabetes, and three times as common as uremia in this series. The majority of cases in this group appeared in the young and very old. Four patients were under 10 years of age and eleven over 50, of whom four were over 70. The onset of coma was abrupt in four cases, but in two of these it was associated with alcoholism. In two of the children a history was obtained of convulsions in the present illness. Other significant data available in the histories were cough in five cases, fever in three cases, "cold" in two cases, and sudden pain in the side, bloody sputum, chill, abdominal pain, vomiting and diarrhea in one case each. In nine cases no history was available. On examination, the temperature was elevated in fourteen cases and subnormal in two (in each of these two cases death occurred within four hours). The pulse was increased in fifteen cases, the respiration in eleven. Cyanosis was noted in twelve cases. In all cases in which the chest was examined, signs of consolidation were found. In two patients the lungs were not examined, presumably because the patients were considered alcohol addicts. In two cases, death occurred before a complete examination could be made. An acidotic breath was noted in three cases, hiccups in two, abdominal distention in two, jaundice and an enlarged liver in one, a positive Babinski's toe sign in one. A white blood cell count was done in ten cases, being increased in two and normal in eight. A red blood cell count was low in three cases; the nonprotein nitrogen of the blood was normal in two cases and high, but below 100 mg. per hundred cubic centimeters, in five cases. Lumbar puncture was done in six cases, but no abnormality was found.

Coma as a presenting sign due to pneumonia was more common in the young and very old and was

attended by a 90 per cent mortality. A history of previous symptoms pointing to pneumonia was sometimes obtained, but occasionally the coma came on abruptly without prodromal symptoms. The chief diagnostic physical signs were fever, rapid pulse and respirations, cyanosis, and signs of consolidation in the chest.

Cardiac Decompensation (seventeen cases, 1.4 per cent of total cases of coma; mortality in this group 70.6 per cent.)—This cause of coma is also rarely mentioned in textbooks. All but four of the patients were over 60 years of age. In six cases a history was obtained of sudden loss of consciousness. In six cases there was a previous history of heart disease, in three of high blood pressure. On examination the heart was found to be abnormal in fourteen cases; in the remaining three it could not be examined adequately. Cyanosis was noted in ten cases, signs of pulmonary congestion in twelve, peripheral edema in seven, dyspnea in five, an enlarged liver in two, and signs of abdominal fluid in one. The neck veins were distended in two cases. The blood pressure was high in two cases, low in five, normal in three, and "unobtainable" in two. There were abnormalities in the urine in five cases. A white blood cell count was high in two cases and normal in five. An electrocardiograph was abnormal in three cases. In two cases, lumbar puncture was done; in one the initial pressure was 420 mm. (doubtless due to increased venous pressure); in the other it was normal. In two cases the heart was enlarged by roentgen examination.

Coma due to cardiac decompensation occurred chiefly in individuals over 60 years of age, often with a sudden onset. A previous history of heart disease or high blood pressure was important. The chief diagnostic physical signs were cardiac abnormalities, pulmonary congestion, cyanosis, peripheral edema, and dyspnea. Other signs of venous congestion were distention of the neck veins, ascites, enlargement of the liver, and increased intracranial pressure. Abnormalities in the electrocardiograph were occasionally of assistance.

Syphilis of the Central Nervous System (seven cases, 0.6 per cent of total cases of coma; mortality 0).—In four cases the onset of the coma occurred with convulsions; in two the patients suddenly "fainted." In four cases there was a history of syphilis with treatment. No history was obtainable in one case. On examination, convulsions were observed in four cases; elevated temperature was noted in four. The pupils were abnormal in five cases, normal in one, not noted in one. Babinski's toe sign was positive bilaterally in one. The knee jerks were absent in two cases. In one case there was paralysis of one arm. Albumin was present in the urine in four cases; the white blood cell count was high in three; the blood Wassermann reaction was positive in six and was not done in one. Lumbar puncture was performed in every case; there was a high pressure in one, a slight increase in white cells in two, an increased protein (78 mg. per hundred cubic centimeters) in one. In the colloidal gold reaction there was a first zone ("paretic") curve in one, a midzone ("meningitic") curve in one, and the presence of a few "2's" in two. The Wassermann reaction was positive in every case. The final diagnosis in two cases was dementia paralytica and in five cerebral vascular syphilis.

The coma due to syphilis of the central nervous system had a sudden onset, usually with convulsions. A history of treated syphilis was usually available. The important physical signs were neurologic: convulsions, abnormal pupils, Babinski's toe sign, and other abnormal reflexes. The blood and spinal fluid Wassermann reactions were usually positive.

Uremia (seven cases, 0.6 per cent of total cases of coma; mortality in this group 100 per cent).—A history of kidney trouble was obtainable in one case, of high blood pressure in one, of convulsions in two, and of recent acute infections in two. On examination, muscular twitchings were seen in two cases, cyanosis in one, and fever in two. There was an odor of acetone on the breath in two cases. The eyegrounds were examined in two cases; in one, hemorrhages, patchy exudate and thin "silver wire" arteries were seen. The heart was enlarged in four cases; there were râles in the chest in three, and edema of the ankles in one. The blood pressure was increased in two cases. The urine was grossly abnormal in six cases; the nonprotein nitrogen of the blood was considerably increased in six and not examined in one. The blood sugar was high in one

TABLE 1.—*Helpful Points in the History in the Diagnosis of Coma and the Conditions in Which They Occur*

Injury	trauma, hemorrhage
Previous "shocks" or "strokes"	cerebral vascular lesions
Suicide attempt, drug ingestion	poisoning
Convulsions	epileptic coma, meningitis, cerebral hemorrhage, eclampsia, central nervous system syphilis
High blood pressure	cerebral vascular lesions, cardiac decompensation, uremia, eclampsia
Recent infection	pneumonia, meningitis, encephalitis, erysipelas, diabetes, uremia
Headache, vomiting	meningitis, subarachnoid hemorrhage, brain tumor
Stiffness of the neck	meningitis, cerebral vascular lesions
Diabetes	diabetic coma, hypoglycemic shock
Pregnancy	eclampsia, ruptured ectopic pregnancy

TABLE 2.—*Physical Changes Helpful in the Diagnosis of Coma and the Conditions in Which They Occur*

Odor of breath	
Alcohol	alcoholism
Acetone	diabetes, uremia
Illuminating gas	carbon monoxide poisoning
Color of skin and mucous membranes	
Hyperemic	alcoholism
Cherry red	carbon monoxide poisoning
Cyanosis	cardiac decompensation, pneumonia
Pallor	hemorrhage, pernicious anemia
Jaundice	cholemia
Local signs of injury	trauma, burns, hemorrhage, epilepsy, erysipelas
Temperature	
Increased	pneumonia, meningitis, encephalitis
Decreased	carbon monoxide poisoning, diabetes
Pulse	
Rapid	diabetes, pneumonia, meningitis, eclampsia
Irregular	cardiac decompensation
Slow	Stokes-Adams disease
Respiration	
Küssmaul	diabetes
Increased	pneumonia
Hemiplegia	cerebral vascular lesions
Observation of convulsions	epilepsy, cerebral vascular lesions, central nervous system syphilis, alcoholism
Vomiting	cerebral hemorrhage, poisoning
Stiffness of the neck	meningitis, cerebral vascular lesions
Kernig's leg sign positive	meningitis, cerebral vascular lesions
Chest signs	
Consolidation	pneumonia
Fluid	empyema, ruptured aortic aneurysm
Pulmonary congestion, ascites, enlarged liver, distended neck veins,	cardiac decompensation
Distention and spasticity of the abdomen	ruptured esophageal varix, carcinomatous erosion of the gastro-intestinal tract, ruptured ectopic pregnancy, miliary tuberculosis
Muscular twitchings	uremia
Abdominal tumor	eclampsia
Bulging fontanels	meningitis
Soft eyeballs	diabetes
Wounds or scars on tongue	epilepsy
Vaginal examination abnormal	pelvic malignancy, ruptured ectopic pregnancy
Blood pressure	
Increased	cerebral vascular lesions, uremia, eclampsia
Decreased	trauma

case. In four cases, lumbar puncture was done. The initial pressure was high in two cases and normal in two. The nonprotein nitrogen of the spinal fluid was very high in the three cases in which it was examined, and the chlorides of the spinal fluid were high in two cases.

In the cases of uremic coma, a history of previous kidney trouble, high blood pressure, convulsions or recent infections was occasionally obtained. The helpful physical signs were muscular twitchings, acetone on the breath, abnormal eyegrounds, enlarged heart, increased blood pressure, and edema of the ankles. Important laboratory changes were gross abnormalities in the urine, and increased nonprotein nitrogen of the blood.

Eclampsia (seven cases, 0.6 per cent of total cases of coma; mortality in this group 68.4 per cent).—A history of pregnancy was obtained in every case, of convulsions in six cases, of vomiting in five, of headache in three, of high blood pressure in one and of swelling of the extremities in one. The women were, of course, in the child-bearing age. Pregnancy was obvious by examination of the abdomen in every case. Other manifestations were rapid pulse, in every case, convulsions in six, blood pressure increased in six and decreased in one (this patient succumbed within eight hours), edema of the extremities in six, and fever in three. The urine was grossly abnormal in every case, the white blood cell count increased in two, the nonprotein nitrogen of the blood was slightly increased in one. A lumbar puncture was done in two cases. The initial pressure was increased in one and was normal in the other.

In the patients entering the hospital in eclamptic coma, a history of pregnancy was always obtained. In most cases a history of convulsions and vomiting was also given. The diagnostic physical signs were abdominal tumor, rapid pulse, convulsions, peripheral edema and increased blood pressure. The urine was grossly abnormal in every case.

Miscellaneous (forty-eight cases, 4.1 per cent of total cases of coma; mortality in this group 75 per cent).—There were many uncommon causes of coma: massive hemorrhage, ten cases (cause: trauma four cases, spontaneous rupture of esophageal varix two cases, carcinomatous erosion in the gastro-intestinal tract two cases, ruptured aortic aneurysm one case, massive hemoptysis one case), burns four cases, erysipelas four cases, encephalitis three cases, brain tumor three cases, miliary tuberculosis two cases, carcinomatosis two cases, and one each of hypoglycemic shock, Stokes-Adams disease, immersion, syncope, hysteria, pernicious anemia, leukemia, ruptured ectopic pregnancy, intestinal obstruction, gangrene of the periurethral tissue and abdominal wall due to rupture of membranous urethra, cholemia, empyema and septicemia. In seven cases the cause of the coma could not be determined. One of these was a patient with Simmond's disease, and one was a patient with Friedreich's ataxia. The chief significant points in the differential diagnosis of the miscellaneous cases are included in the following discussion.

COMMENT

The importance of the history in the early diagnosis of coma as a presenting sign cannot be overstressed. Table 1 lists the points in the history which were of special diagnostic value. Table 2 lists the physical changes that were outstanding in their diagnostic value. The age of the patient was of interest, since the degenerative conditions (cerebral vascular lesions, cardiac decompensation and uremia) occurred chiefly among elderly patients, while infectious conditions (meningitis and pneumonia) were more frequent in the young. The laboratory data were often the deciding points in the diagnosis. Table 3 illustrates the most helpful laboratory observations.

It should be noted that little emphasis has been placed on the depth of the coma, the condition of the pupils or the state of the reflexes. In our cases these have not been of great practical differential value. The depth of the coma may vary, no matter what the cause. The pupils tend to be abnormal in the majority of the cases of coma, regardless of the cause, and there is no definite rule as to what kind of abnormality will be present in any particular case. The same is, in general, true of the reflexes. Gowers [7] has pointed out that the manifestations in a patient in coma depend to a large extent on the depth of the coma, whatever the cause may be. This has been our experience. If the coma is light, the reflexes may be preserved and may be hyperactive, perhaps because of release of the lower centers by lack of cerebral control. Automatic swallowing may be preserved, and the pupils may still react to light. Painful stimuli may elicit muscular movements. As coma deepens, the depressed condition of the higher centers spreads to the lower. Reflexes become diminished or absent, swallowing becomes impossible, the pupils fail to react to light, the body musculature becomes flaccid, and myotatic irritability may be lost. The palatal muscles may share in this relaxation and, moved by the respiratory current of air, may cause the peculiar stertor that is a familiar indication of the depth of the coma. Even the respiratory center may become depressed, so that respiration is decreased, shallow and irregular. The lessened respiratory movements fail to clear the air passages of the secretion, which accumulates in the bronchi and finally in the trachea, causing the familiar "rattle" that is popularly and rightly recognized as a frequent harbinger of death.

TABLE 3.—*Laboratory Observations Helpful in the Diagnosis of Coma and the Conditions in Which They Occur*

Lumbar puncture	
Pressure	
Increased	cerebral vascular lesions; meningitis; trauma; syphilis of the central nervous system
Decreased	diabetes
Bloody fluid	cerebral vascular lesions; trauma
Purulent fluid	meningitis
Organisms by smear and culture	meningitis
Sugar	
Low	meningitis
High	diabetes
Protein high	meningitis; syphilis of the central nervous system
Spinal fluid Wassermann positive	syphilis of the central nervous system
Blood examination	
Sugar	
High	diabetes
Low	insulin shock
Nonprotein nitrogen high	uremia
Wassermann test positive	syphilis of the central nervous system
Low red blood count, abnormal smear	pernicious anemia; leukemia
Culture positive	pneumonia, meningitis, septicemia
Spectroscopy	carbon monoxide poisoning; methemoglobinemia
Urine examination	
Sugar	diabetes
Gross albuminuria	eclampsia, uremia, cardiac decompensation
Gastric lavage; examination of gastric contents	poisoning
Roentgenograms	
Skull	fracture across middle meningeal artery in extradural hemorrhage
Lungs	pneumonia; empyema; miliary tuberculosis
Heart	cardiac decompensation
Electrocardiograph	heart block; cardiac decompensation

7. Gowers, W. R.: A Manual of Diseases of the Nervous System, London, J. & A. Churchill **2**: 99, 1893.

It should be pointed out that there are many other causes for coma that are not included in this discussion; for example, sunstroke, electrical shock and acute pancreatitis. These conditions are sufficiently rare, however, so that no patient entered the Boston City Hospital in coma in the year 1933 with such a diagnosis.

SUMMARY

In 1,167 cases of coma as a presenting sign, the data available on admission to the hospital, including history and physical and laboratory observations, have been analyzed with a view to determining the characteristic features of diagnostic importance in each of the various causes of the coma. The material is arranged in the order of the relative frequency of the various causes, and a summary of the most practical diagnostic characteristics is appended under each cause. In the discussion, the differential diagnosis is considered and the most significant points in the history, physical examination, and laboratory changes are tabulated. It is noted that the depth of the coma, condition of the pupils, and state of the reflexes are not of great diagnostic importance.

PERIPHERAL NEURITIS CAUSED BY PROLONGED USE OF DINITROPHENOL

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The number of cases of poisoning by alpha-dinitrophenol has greatly increased in the past year. This is due to the fact that the drug is now frequently used either alone or as a constituent of certain preparations for reducing weight. Notwithstanding the considerable number of cases of poisoning that have been reported, there still remain many points for consideration in the study of this drug. For this reason it seems justifiable to report instances of poisoning in the hope that, from a larger mass of more diversified observations, facts of direct importance regarding these mooted points may be obtained.

This report deals primarily with late or delayed poisoning by dinitrophenol. The cases here detailed are believed not to be unusual but to present a condition not hitherto described, so far as the relation of the cause and its effects are concerned. As has been stressed by Quick,[1] too little emphasis has been given to the possibility that a drug such as dinitrophenol may have an indirect or latent effect. Repeated warnings have been given, particularly against its use in patients with a history of arthritis.[2] It has long been known that chronic intoxication by benzene,[3] dinitrobenzene,[4] dinitrotoluene [5] and trinitrotoluene [6] may cause neuritis. It would therefore not be surprising if dinitrophenol, which is so closely chemically related to these substances, should also possess this toxic feature.

This report is based on the study of twenty-two persons who took alpha-dinitrophenol (1-2-4). Fifteen were seen in private practice and the remainder in the wards of Bellevue Hospital. Sixteen showed no deleterious effects from the use of the drug; of the remaining six cases, in three a rash developed, in one loss of taste and in two peripheral neuritis. The six patients showing toxic symptoms were taking the drug for obesity and gave a negative history for allergy, neuritis, arthritis, alcoholism, diabetes, tuberculosis, or liver or kidney disease.

The symptoms of acute poisoning with dinitrophenol are too familiar to require detailed description here, so only brief mention will be made of them. In one woman, weighing 110 Kg. and taking 0.1 Gm. of dinitrophenol a day, a markedly pruritic rash developed on the eighth day, similar to those previously described.[6] The drug was immediately stopped and the rash disappeared in five days. She was very anxious to resume taking the drug, even though she was cautioned that the rash might return.[7] Tainter and his associates [6] maintain that the use of the drug may be resumed with impunity after the skin reaction has subsided. Five days later she again took 0.1 Gm. a day and in two days the rash reappeared. The drug was stopped and the condition cleared up rapidly. In another woman, weighing 69 Kg., after taking 0.1 Gm. a day for eight days a similar eruption developed; the drug was stopped and the rash cleared up in two days. In the third patient, weighing 80 Kg., taking 0.1 Gm. three times a day, a rash developed on the twenty-first day. She lost 13 pounds (5.9 Kg.) during this period. Coincident with the eruptions all these patients complained of weakness in the legs and rheumatoid pains in the arms and fingers.[2b] These symptoms promptly disappeared after the drug was stopped.

Loss of the sense of taste as a result of intoxication by dinitrophenol has been reported by Tainter, Stockton and Cutting [6] and by Jackson and Duvall.[8] We had one patient in whom this developed after she had been taking the drug for thirty-six days. This loss was complete for "sweet," "sour," "salt," and the like, and she experienced a "coppery" taste in her mouth at all times. She was not anesthetic to epicritic and protopathic stimuli; i. e., to light touches, pin pricks and temperature. The sense of smell was unimpaired. The drug was not stopped and her taste gradually returned to normal in a month.

The two cases in which what we believe to be a peripheral neuritis developed following prolonged use of this drug will be reported in some detail. In presenting these cases we are fully aware of the important rôle played by vitamin B deficiency in the production of peripheral neuritis. These patients were on a diet containing adequate amounts of the vitamin B complex.

REPORT OF CASES

CASE 1.—D. M., a white woman, aged 33, married, a housewife, with a past medical and family history which was negative for any condition that might contraindicate the use of alpha-dinitrophenol, was given a drug for the purpose of reducing. She was 63 inches (160 cm.) tall, weighed 87 Kg. and had a basal metabolic rate of + 1 per cent. Dec. 7, 1933, she was given 0.1 Gm. once a day, and as she showed no sensitivity

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1. Quick, A. J.: Dangerous Drug Reactions, J. A. M. A. **102**: 1419 (April 28) 1934.
2. (*a*) Perkins, R. G.: A Study of Munitions Intoxications in France, Pub. Health Rep. **34**: 2335 (Oct. 24) 1919. (*b*) Anderson, H. H.; Reed, A. C., and Emerson, G. A.: Toxicity of Alpha-Dinitrophenol, J. A. M. A. **101**: 1053 (Sept. 30) 1933.
3. Pugliese, A., quoted by Hamilton, Alice: Industrial Poisons in the United States, New York, Macmillan Company, 1929, p. 472.
4. Ross, J.: Poisoning by Roburite, M. Chronicle **10**: 89 (May) 1889. Cords, R.: Dinitrobenzol und Sehnerv, Zentralbl. f. Gewerbehyg. **7**: 6 (Jan.) 1919.
5. Stewart, T. G.: Causation and Symptomatology of Multiple Neuritis, Brit. M. J. **2**: 461 (Sept. 12) 1925.
6. Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: Use of Dinitrophenol in Obesity and Related Conditions, J. A. M. A. **101**: 1472 (Nov. 4) 1933.
7. Frumess, G. M.: Allergic Reactions to Dinitrophenol, J. A. M. A. **102**: 1219 (April 14) 1934.
8. Jackson, Harry, and Duvall, A. I.: Dinitrophenol Poisoning, J. A. M. A. **102**: 1844 (June 2) 1934.

to the drug after ten days it was increased to 0.1 Gm. three times a day. There was no excessive sweating or other untoward symptom until March 8, 1934, at which time she stated that her toes felt numb. Her weight at this time was 78 Kg. The drug was continued. The numb feeling in her toes persisted and on March 29 (weight 75 Kg.) she started to experience spontaneous tingling, "pins and needles," dulness and itching of the toes. A careful search was made for a local cause of this particular dysesthesia, whether in the skin, muscles, bones, joints or blood vessels. Pain was not due to local disease, nor was it continuous or accompanied by objective phenomena such as redness of the skin, swelling or tenderness of the tissue or rigidity of the joints and so on. The sense of position was unimpaired and there was no decrease in the vibratory sense or finer coordination of the toes. There was a slight increase of the patellar reflexes. The patient never had an elevation of temperature.

April 12 (weight 73 Kg.) she complained of slight arthritic pains in the left hand, and, as she was developing marked hyperesthesia of the toes to touch, the drug was stopped. Ordinary stimuli evoked an unusual sensation, as for example a feeling of tingling when the skin was touched and a feeling of acute pain when moderate cold was applied. No local pallor as seen in the early stages of cutaneous angioneuroses, edema, or increase in sweating of the affected parts was observed. These paresthesias persisted and fleeting pains developed in various joints. April 30, in addition to the toes, the ankles, left wrist and the fingers of both hands were painful. The joints were normal on examination. The arthritic pains did not respond to salicylates and amidopyrine. By May 8 there was considerable improvement in the joint pains but exacerbations occurred with changes in the weather. At the present writing, nine months after the onset, the arthritic pains have entirely disappeared but some numbness and tingling of the toes persists.

The innumerable possibilities of diagnosis were gradually reduced as the study of the symptoms proceeded, until it seemed that but one theory, namely, peripheral neuritis, could be held to explain the acroparesthesia and arthralgia.

CASE 2.—A white woman, aged 56, a housewife, who was 62 inches (157 cm.) tall, weighed 80 Kg. and had a basal metabolic rate of —5 per cent, had moderate arteriosclerosis, with essential hypertension of 192 systolic, 120 diastolic. She exhibited no sensitivity to the drug, so after ten days she was put on 0.1 Gm. of alpha-dinitrophenol three times a day. Thirty-six days later she lost her sense of taste (previously described). Her weight at this time was 70 Kg. and the blood pressure 170 systolic, 90 diastolic. The drug was continued and her taste gradually returned to normal on the seventy-third day (weight 64.5 Kg., blood pressure 178/98). Twelve days later (weight 60 Kg., blood pressure 178/98) she stated that all her toes were numb and felt dead, as if they did not belong to her. In view of the experience in the previous case the drug was immediately stopped. No local cause for the sensory disturbances could be found. The course was very similar to that in case 1 except that the patient experienced more pain in the joints of the toes and was more annoyed by the hyperesthesia.

The moderate peripheral sclerosis present in this case may have been a contributing factor. I believe that the loss of the sense of taste in this patient may be part of the neuritic picture and therefore should be considered as a form of chronic poisoning in contrast to the dermatitis. Outside of the slight discomfort in the toes, both patients feel better now than prior to taking the drug. The blood pressure in the first case was not affected, and in the second case it dropped from 192/120 to 170/90, at which level it persisted for about two months after the drug was stopped before returning to its original level.

This delayed toxic effect of dinitrophenol is not due to accumulation of the drug in the body, for it is rapidly destroyed and eliminated.[2a] A tolerance for this drug is rapidly established in animals.[9] The effects noted are most likely due to the repeated attacks of therapeutic amounts of the drug in certain individuals who are unpredictably sensitive to dinitrophenol.[10]

SUMMARY AND CONCLUSIONS

1. Of twenty-two persons taking dinitrophenol, symptoms of poisoning developed in six: in three a pruritic rash, in one loss of taste, and in two peripheral neuritis.

2. The cases of multiple peripheral neuritis showed very striking sensory symptoms but no motor or trophic disturbances. The condition starts in the toes and exhibits various disturbances of sensation, such as prickling, numbness and pain.

3. Paresthesia persists long after its original cause has been removed.

4. This delayed poisoning is due to repeated exposure to small amounts of dinitrophenol and not to an accumulation of the drug in the body.

477 First Avenue.

FUNCTIONAL CHANGES IN LIVER, HEART AND MUSCLES, AND LOSS OF DEXTROSE TOLERANCE

RESULTING FROM DINITROPHENOL

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A short time after the appearance of the first clinical report on the use of dinitrophenol,[1] we began a series of studies of its effects in producing weight loss in obese patients. It seemed important to determine whether the metabolic stimulation produced by the drug was accompanied by evidence of injury to the patients.

Dinitrophenol first came to the attention of the medical profession as an industrial poison.[2] Although during the World War poisoning of those working with it in munitions plants was frequent,[3] physicians and drug manufacturers, undeterred by the early history of the drug, have brought about a tremendous usage during the past year. One clinic has supplied to physicians, or to patients on physicians' prescriptions, over 1,200,000 capsules of 0.1 Gm. each, corresponding to about 4,500 patients treated with the drug in one year. More than twenty wholesale drug firms are marketing the compound.[4]

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10. Perkins.[2] Anderson, Reed and Emerson.[3] Magne, Mayer and Plantefol.[9] Masserman, J. H., and Goldsmith, Harry: Dinitrophenol: Its Therapeutic and Toxic Actions in Certain Types of Psychobiologic Underactivity, J. A. M. A. **102**: 523 (Feb. 17) 1934. Poole, F. E., and Haining, R. B.: Sudden Death from Dinitrophenol Poisoning, ibid. **102**: 1141 (April 7) 1934. Dinitrophenol Poisoning, editorial, ibid. **102**: 1156 (April 7) 1934.

From the Department of Medicine, Washington University School of Medicine, the Barnes Hospital, and the Washington University Clinics.

1. Cutting, W. C.; Mehrtens, H. G., and Tainter, M. L.: Actions and Uses of Dinitrophenol, J. A. M. A. **101**: 193 (July 15) 1933.

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As was to be expected, numerous reports of toxic actions have appeared. Skin reactions, consisting of maculopapular dermatitis, urticaria or angioneurotic-like swelling, usually accompanied by burning sensations and pruritus, and sometimes by desquamation, have been frequent.[5] Evidence of renal damage has been reported in two cases.[6] In three patients liver damage has apparently been produced.[7] Five deaths have been reported from the use of the drug and one from the closely related compound dinitrocresol. Of the six deaths, three have occurred with known overdosage.[8] The other three occurred in patients taking amounts within the so-called therapeutic range of from 3 to 5 mg. per kilogram of body weight.[9] Two of these deaths followed the development of malignant neutropenia. Severe neutropenia with recovery has occurred in four other cases in which excessive doses were not given.[10] Physicians have been encouraged to minimize these evidences of toxicity on the ground that unpredictable idiosyncrasies can account for them.[4]

Our studies reveal that dinitrophenol causes notable clinical variations in the functions of the liver, heart and muscles and a loss of dextrose tolerance in patients who have displayed no evidence of special sensitivity.

METHODS OF STUDY

Liver function was tested by the determination of the icterus index after the serum was decolorized with dilute hydrochloric acid, by the van den Bergh reaction on the serum, by the estimation of urobilinogen in the urine, by the galactose tolerance test, and by the quantitative estimation of phenoltetraiodophthalein retention after intravenous injection. The technic of the study of liver function with this dye and the results in various types of liver disease have been described by Cole, Copher and Graham.[11]

The tests of renal function consisted of repeated examination of the urine for albumin, red cells, white cells and casts, concentration-diuresis tests with measurement of the specific gravity, phenolsulphonphthalein excretion and blood nonprotein nitrogen determinations.

Effects on the circulatory system were studied by frequent records of the pulse rate and blood pressure, frequent auscultation, electrocardiographic tracings, and 6-foot roentgenograms of the heart with measurement of the cardiac shadow. The respiratory rate was also counted several times a day.

Exercise tolerance tests, urinary excretion of creatine and creatinine, urinary phosphate excretion and estimation of blood lactic acid were studied as possible indexes of functional changes in the muscles.

Dextrose tolerance was estimated by giving the patients orally 0.8 Gm. of dextrose per pound of body weight and determining the sugar in the capillary blood (by Somogyi's method[12]), after one-half hour, one hour, two hours and three hours.

Frequent measurements of the morning resting fasting metabolic rate were made in all cases. The type of fuel was studied by measurement of the nitrogen excretion in the urine and by determination of respiratory quotients before and after a standard test meal. The Hagedorn apparatus was employed.[13]

TABLE 1.—*Changes in Liver Function Tests Following Dinitrophenol*

Patient	Dye Retention, per Cent		Duration of Treatment, Days	Total Dose, Gm.
	Before	After		
1	10	24	7	2.1
2	12	19	7	2.1
3	14	28	14	4.2
4	10	17	21	6.3
		17	56	16.8
		15*		
5	13	20	21	6.3
		18	56	16.8
		15*		
6	14	21	21	6.3
7	15	15	12	3.6
8	12	15	14	4.2

* After omission of drug for period of fourteen days.

Those cases studied in Barnes Hospital were under the constant observation of the trained staff of the Tirrill Metabolism Ward, the diets being accurately regulated and material for chemical determinations promptly collected and measured. All patients, whether studied in the hospital or outpatient department, were observed closely and frequently to detect skin rashes. All the patients were obese women between 22 and 56 years of age. The amount given was in each case 0.1 Gm. of alpha-dinitrophenol three times daily.

RESULTS

Liver Function.—Six out of eight patients showed an increased dye retention after dinitrophenol medication (table 1). Normal dye retention at the end of thirty minutes is between 10 and 15 per cent. In two patients receiving the drug for seven days there was a rise from 10 to 24 per cent and from 12 to 19 per cent respectively. In one patient receiving the drug for fourteen days, retention increased from 14 to 28 per cent. In three patients after twenty-one days of medication there were rises from 10 to 17, from 13 to 20 and from 14 to 21 per cent respectively. Two of these patients received the drug for eight weeks with retentions of 17 and 18 per cent at the end of that time. The dinitrophenol was then omitted for two weeks and the liver function tests were repeated. Fifteen per cent was retained in both cases. This is the upper limit of nor-

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11. Cole, W. H.; Copher, G. H., and Graham, E. A.: Simultaneous Cholecystography and Determination of Hepatic Function, J. A. M. A. **90**: 1111 (April 7) 1928.

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mal, the control readings before use of the drug having been 10 and 13 per cent. In two patients there was practically no change in the ability to excrete the dye after taking dinitrophenol.

No significant variations in the corrected icterus index, the serum van den Bergh, the urinary urobilinogen or the galactose tolerance tests were noted. This may not be surprising, since these tests are believed to measure either very extensive liver damage or obstruction to bile excretion. In the estimation of liver damage in the absence of biliary obstruction or very severe hepatic injury, dye excretion tests may be the more sensitive criteria.[14]

In 1918 Warthin [15] reported the first pathologic study of a fatal case of dinitrophenol poisoning in this country. An acute degenerative hepatitis similar to that resulting from chloroform, arsenic, phosphorus, trinitrotoluene and acute yellow atrophy was the chief finding. One of the main effects of dinitrophenol experimentally has been the rapid depletion of liver glycogen.[16] The importance of an adequate glycogen store in the liver as a protection against toxins has been much emphasized.[17] Trinitrophenol (picric acid), trinitrotoluene and other compounds closely related to dinitrophenol are notorious liver poisons. It is therefore not surprising to find evidence of liver damage, even with the small doses and short periods employed in our study.

Kidney Function.—No changes were noted in the urinary sediment, in the blood nonprotein nitrogen or in the kidney function tests in three patients studied in the hospital over a period of eight weeks.

Circulatory System.—There were no significant alterations in the pulse rate, blood pressure, respiratory rate or cardiac auscultation in six patients, each studied in the hospital for from six to eight weeks. These observations correspond with those of others.

Three of our patients, however, showed definite alterations in their electrocardiograms. In one patient's record there occurred a marked increase in size of the T wave in the first two leads, an inversion of the T wave in lead 3, and a depression of the ST interval in lead 2. In the second case there was an increase in the size of the T waves, depression of the ST interval and moderate notching of the QRS complex. In the third, inversion of the T wave in lead 3 and left axis deviation developed. These changes in all three cases began to appear at the end of the second week and were more marked toward the end of the eight weeks of medication. Two of the patients showed persistence of the changes after the drug had been omitted for two weeks.

Somewhat similar effects in two patients and in four of six experimental animals have been reported by de Châtel and Motika.[6] In two of the fatal human cases, fragmentation of the heart muscle has been found at postmortem examination.[18] The electrocardiographic changes may be early signs of toxic damage to the heart.

Muscle.—Marked fatigue is one of the most evident effects of dinitrophenol medication. Exercise tolerance tests in four patients revealed considerable loss of strength and endurance. These four patients received creatine-free diets of 1,100 calories, and daily determinations were made of the urinary creatine and creatinine.

After a control period of one week dinitrophenol medication was begun. In two, urinary phosphate and nitrogen were also determined daily. In each of the four cases there was a rise in creatine excretion. In two the creatinine rose slightly, in one it fell and in one it was essentially unchanged. The total creatine-creatinine excretion rose in three. Urinary phosphate rose during the first week or two, then tended to return to the control level. The results are summarized in tables 2 and 3. There was a rise in the blood sugar in all four cases, and blood lactates were slightly increased in two.

TABLE 2.—*Effect of Dinitrophenol on Creatine and Creatinine Excretion*

	Daily Average in Grams					
	Patient 4			Patient 5		
Week	Creatine	Creatinine	Total Creatinine	Creatine	Creatinine	Total Creatinine
1. Control	0.188	0.736	0.924	0.132	1.166	1.298
2. First	0.254	0.852	1.106	0.226	0.746	0.972
3. Second	0.380	0.666	1.046	0.277	1.008	1.285
4. Third	0.270	0.862	1.132	0.146	0.842	0.988
5. Fourth	0.287	0.649	0.936	0.148	0.756	0.904
	Patient 9			Patient 10		
1. Control	0.082	0.980	1.062	0.000	1.098	1.098
2. First	0.126	1.007	1.133	0.160	1.057	1.217
3. Second	.....	.....	.....	0.267	1.111	1.378

TABLE 3.—*Effect of Dinitrophenol on Phosphorus and Nitrogen Excretion in Urine*

	Daily Average in Grams							
	Patient 4				Patient 5			
	Phosphorus		Nitrogen		Phosphorus		Nitrogen	
Week	Intake	Excretion	Intake	Excretion	Intake	Excretion	Intake	Excretion
1. Control	1.017	0.676	9.75	8.82	1.084	0.714	9.23	10.44
2. First	1.033	0.930	11.06	8.82	0.984	1.094	11.26	7.92
3. Second	1.170	1.052	8.74	8.44	1.046	0.864	8.50	5.74
4. Third	0.920	0.798	9.06	7.50	0.823	0.780	8.67	7.29
5. Fourth*	0.970	0.791	8.19	8.11	0.953	0.820	8.29	8.26

* During the first three weeks the diet contained 2,200 calories. During the fourth week it contained 1,100 calories.

Creatinuria is increased whenever there is rapid atrophy of the muscles, in fasting,[19] in conditions in which the ability to utilize carbohydrate is impaired,[20] in fever and in hyperthyroidism,[21] and in muscular atrophies and dystrophies.[22]

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Shorr, Richardson, and Wolff,[23] in studying the muscle weakness of hyperthyroidism, found certain biochemical similarities to progressive muscular dystrophy. They concluded that the high metabolism of hyperthyroidism overtaxes the processes maintaining the integrity of the phosphocreatine mechanism and that the muscle weakness of exophthalmic goiter is of the nature of an acute muscular dystrophy. A somewhat similar

TABLE 4.—*Effect of Dinitrophenol on Dextrose Tolerance* *

	Blood Sugar in Mg. per 100 Cc.										Duration of Medication, Days	Total Dose, Gm.
	Before					After						
Case	Fasting	½ Hr.	1 Hr.	2 Hr.	3 Hr.	Fasting	½ Hr.	1 Hr.	2 Hr.	3 Hr.		
1	86	114	138	152	112	83	147	162	187	129	7	2.1
2	91	119	146	136	101	90	119	142	118	112	7	2.1
3	94	141	129	113	96	106	192	210	164	130	14	4.2
4	104	164	164	132	104	99	200	208	124	112	14	4.2
5	90	129	146	128	109	78	139	149	127	116	14	4.2
6	94	131	145	122	70	93	128	139	127	58	14	4.2
7	153	224	313	322	262	153	266	310	408	362	14	4.2
						180	230	318	330	280†		
8	71	123	116	116	54	78	184	194	165	99	14	4.2
						76	170	182	140	110†		
9	85	162	181	100	116	104	191	255	277	122	21	6.3
10	77	114	170	116	67	106	146	177	157	131	21	6.3
11	140	200	210	244	183	145	228	264	257	248	21	6.3
12	172	259	312	348	280	196	298	312	348	280	14	4.2
						180	320	360	414	304	28	8.4

* Cases 7 and 11 were in a prediabetic state. Case 12 presented frank diabetes.

† After omission of the drug for a period of fourteen days.

disturbance of muscle metabolism would explain the marked weakness occurring after metabolic stimulation with dinitrophenol.

Experimental studies of Tainter and Cutting[24] showed the liver and muscles to be the chief sites of action of the drug. Recent studies of increased muscle metabolism[25] indicate that the oxidation of lactic acid formed from glycogen, the formation of hexosephosphate from glycogen and phosphocreatine, and the hydrolysis of phosphocreatine are the fundamental biochemical processes in the increased energy production. Recovery is accompanied by resynthesis of phosphocreatine, and resynthesis of lactic acid and hexosephosphate to the glycogen from which they were derived. When normal recovery is prevented, a marked decrease in muscle glycogen and phosphocreatine, an increase in muscle and blood lactates, and an increase in the elimination of dextrose, phosphate and creatine should be expected.

Evidence of prevention of recovery with actual loss of muscle substance as a result of dinitrophenol medication would seem to be offered by our clinical and biochemical studies and by the experimental studies of others.[26]

Dextrose Tolerance.—Blood sugar curves following dextrose tolerance tests showed a definite increase in the elevation of the curve in nine out of twelve cases. The loss of tolerance was evident after seven days and increased in degree with the duration of administration and with the total dose given (table 4). The type of diet had no influence on the susceptibility to this change. In cases 2, 5 and 6 the rate at which dextrose was removed from the blood was essentially unchanged. No patient showed an increased ability to utilize dextrose. There is, of course, considerable variation possible in successive blood sugar curves on the same patient. The fact that the chief factor causing such changes, namely, alterations in diet, has been eliminated makes it significant that all the differences encountered were in the direction of loss of tolerance.

One patient with diabetes showed a progressively higher curve while receiving the drug for four weeks. The impaired tolerance persisted after discontinuance of the medication, so that the insulin dosage on the same control diet had to be increased. Two patients in a prediabetic state showed loss of tolerance. In one of these tolerance had not returned to the control level after omission of dinitrophenol for two weeks. In one nondiabetic patient who had received the drug for fourteen days, tolerance had not returned to normal two weeks after it had been stopped.

Magne, Mayer and Plantefol,[16] observing great decreases in muscle and liver glycogen, concluded that the increased oxidation with dinitrophenol depended chiefly on the combustion of carbohydrate. It has been suggested[27] that dinitrophenol might possibly be of use in increasing carbohydrate utilization in diabetes. Our observations fail to support this supposition, since the diabetic as well as the nondiabetic patients showed decreased sugar tolerance. We did not observe any evidences of increased toxicity in diabetic patients. Special susceptibility might have been expected, since in diabetic dogs its toxicity is greatly increased.[28]

TABLE 5.—*Effect of Dinitrophenol on Respiratory Quotients, Fasting, and Following a Test Meal*

Patient		Respiratory Quotients: Before Dinitrophenol	Respiratory Quotients: While Taking Dinitrophenol
5	Fasting	0.77	0.75
	½ hour	0.77	0.66
	1 hour	0.87	0.75
	2 hours	0.69	0.78
	3 hours	0.76	0.68
	4 hours	0.86	0.69
	Average following meal	0.79	0.71
4	Fasting	0.82	0.75
	½ hour	0.71	0.71
	1 hour	0.82	0.70
	2 hours	0.84	0.74
	3 hours	0.83	0.75
	4 hours	0.82	0.71
	Average following meal	0.80	0.72
8	Fasting	0.80	0.70
	½ hour	0.82	0.71
	1 hour	0.79	0.79
	2 hours	0.87	0.70
	3 hours	0.94	0.78
	4 hours	0.84	0.80
	Average following meal	0.85	0.76

The standard test breakfast consisted of bread, butter and beef, calculated to contain protein 27 Gm., fat 36 Gm., and carbohydrate 40 Gm.

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28. Tainter, M. L.; Boyes, J. H., and De Eds, F.: Actions of Dinitrophenol in Diabetic Dogs, Arch. internat. de pharmacodyn. et de thérap. **45**: 235 (May 15) 1933.

The high metabolic rate of hyperthyroidism is frequently accompanied by diminished sugar tolerance and by a reduction of liver glycogen, attributed by some observers to a fault in glycogenesis. A similar mechanism may explain the diabetogenic action of dinitrophenol. However, the persistence of the decreased tolerance long after the drug has been discontinued and the metabolic rate has returned to normal suggests impairment of insulin production. The action of exogenous insulin was unchanged in two of our cases, indicating that the hyperglycemia was not due to any directly insulin-resistant factor[29] but possibly to a reduced insulin supply.

Fuel Burned.—The metabolic rates rose within twenty-four hours after the first ingestion of the drug and remained at a level between plus 30 and plus 70 per cent as long as it was continued. In two patients receiving the drug over a period of four weeks there was no rise in urinary nitrogen (table 3). In three the respiratory quotients during the use of the drug were slightly lower than in the control period. This was true both of the determinations made while fasting and of those following a standard test meal containing protein, fat and carbohydrate (table 5). Accordingly, we must conclude that both carbohydrate and fat, but not protein, serve as fuel for the increased oxidation and that the principal nutrient oxidized is fat. These results are in essential agreement with those obtained by Hall and his co-workers.[16]

Miscellaneous Results.—In all, fifteen patients were studied, six over prolonged periods in the hospital and nine in the outpatient department. No case of neutropenia occurred. Three patients had quite severe skin rashes. Five patients had gastro-intestinal disturbances with repeated vomiting. One experienced practically a complete loss of the sense of taste, lasting for several weeks after discontinuance of the drug. All the patients complained of greatly increased perspiration, loss of appetite and weakness. Fluid intake was increased and urine output greatly diminished. On diets of approximately 20 calories per kilogram of body weight, the weight loss averaged from 1½ to 2½ pounds (680 to 1,135 Gm.) per week. On diets of 11 calories per kilogram the loss increased to from 2 to 4 pounds (900 to 1,800 Gm.) weekly. In some instances the weight loss was a pound or more a day and could be demonstrated to be due chiefly to fluid loss by perspiration.

SUMMARY

Dinitrophenol in small doses caused functional changes indicative of toxicity in liver, heart and muscles in a large percentage of patients in whom no special idiosyncrasy was noted. It also produced a loss of dextrose tolerance.

Only two of the five deaths that have been reported have occurred with overdosage. Three have followed doses within the so-called therapeutic range. Six cases of severe neutropenia have occurred, two of them fatal. These and other toxic manifestations have been attributed to special susceptibility.

The fact that the majority of our patients showed somewhat alarming functional changes emphasizes the question whether the use of a drug with so great potential dangers is justified in the treatment of a relatively benign condition such as obesity.

600 South Kingshighway.

29. MacBryde, C. M.: Insulin Resistance in Diabetes Mellitus, Arch. Int. Med. 52: 932 (Dec.) 1933.

THE NATURE OF THE PRECEDING INFECTION IN ACUTE GLOMERULONEPHRITIS

IN TWO NEW YORK HOSPITALS AND IN FOUR SOUTHERN HOSPITALS

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BEATRICE CARRIER SEEGAL, M.D.
AND
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NEW YORK

A previous paper[1] has shown that the reported hospital medical admission rate for acute glomerulonephritis is similar in four latitude regions of the United States and southern Canada. In contrast, there is a diminished case frequency for scarlet fever and rheumatic fever in the South as compared with the North. Since clinical and laboratory evidence favors the hypothesis that acute glomerulonephritis is chiefly related to a preceding hemolytic streptococcus infection, it appeared peculiar that the diminution in incidence of the hemolytic streptococcus diseases scarlet fever and rheumatic fever in the southern latitudes did not also occur in the group of patients with acute nephritis. Osman,[2] who studied the data on deaths from acute and chronic nephritis compiled from tables in the League of Nations International Year Book for 1928, found it impossible to correlate the figures with climatic or racial factors.

In order to gain more accurate information concerning the geographic incidence of acute glomerulonephritis and the type of infection predisposing toward it, a comparative study of the hospital records of acute glomerulonephritis has been made over a period of years in the Presbyterian and Babies hospitals in New York, the Touro Infirmary, New Orleans, the John Sealy Hospital, Galveston, Texas, and the Baylor and Parkland hospitals, Dallas, Texas. The records for these hospitals have been reviewed for the following years: Presbyterian Hospital, 1917 through 1933; Babies Hospital, 1930 through 1933; Touro Infirmary, 1927 through 1932; John Sealy Hospital, 1920 through 1932; Baylor Hospital, 1927 through 1932; Parkland Hospital, 1928 through 1932.

The cases of acute glomerulonephritis have been selected in these various institutions on the basis of the clinical history, the physical examination, the laboratory data and the course of the disease. In many instances the cooperation of the physicians in the respective hospitals was the determining factor in the selection of cases with questionable diagnosis. Case histories were excluded from this group, which on study showed that the underlying condition was not acute glomerulonephritis of the type unequivocally agreed on by clinicians. Such histories were examples of disease better classified in one of the following categories: (*a*) postoperative renal suppression, (*b*) renal shutdown due to such agents as prostatic hypertrophy and

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This study was made possible by the generous cooperation of Dr. John H. Musser and his associates at the Tulane University Medical School, Dr. I. I. Lemann of Tulane University and the Touro Infirmary, Dr. Arthur Vidrine, Dean of the University of Louisiana Medical School, Dr. Paul Cameron of the Louisiana State University Medical School, Dr. Henry M. Winans of Baylor University Medical School, and Dr. Charles T. Stone of the John Sealy Hospital.

1. Seegal, David; Seegal, Beatrice C., and Jost, E. L.: Am. J. M. Sc., to be published.

2. Osman, A. A., and de Wesselow, O. L. V. S.: Tr. M. Soc., London 55: 234, 1932.

malignant metastasis, (*c*) bacterial endocarditis, (*d*) poisoning by such agents as mercury and arsphenamine, (*e*) hypertensive cardiovascular disease, (*f*) nephritis due to arteriosclerosis, and (*g*) nephrosis.

When the histories of those patients believed to have had true acute glomerulonephritis had been finally selected, it was found that, in the periods studied, there were 152 cases at the Presbyterian Hospital,

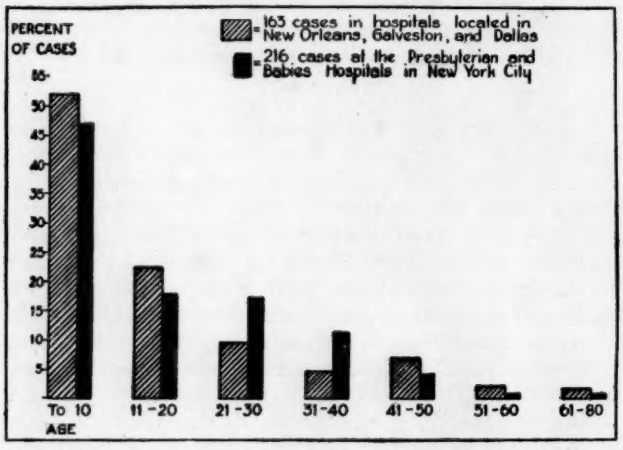

Chart 1.—Age incidence in acute glomerulonephritis.

sixty-six cases at the Babies Hospital and 163 cases, about equally divided, in the southern hospitals. There were, therefore, 218 cases in the New York hospitals for comparison with 163 cases in the southern hospitals.

It was possible to determine an approximate census for the medical hospital admissions in the New York hospitals as compared with those in the South, despite the difficulties related to the inclusion of a dermatologic or a neurologic unit in the medical service of one hospital, whereas another hospital might have one of these services as an independent unit. The figures for the hospital medical admissions, while not entirely accurate, showed that in the periods studied there were approximately 34,918 medical admissions in the four southern hospitals and 35,000 medical admissions in the two northern hospitals.

On the basis of the data thus collected, the incidence for acute glomerulonephritis in the northern hospitals was 0.62 per cent; that for the southern hospitals was 0.47 per cent. It was found, however, that in one of the southern hospitals it was customary each year for from seven to nine cases of frank acute glomerulonephritis to be studied in the outpatient department for blood chemistry values alone. These patients were not admitted to the hospital but were referred home for treatment by the private physician. Such histories could not be included in the records studied in this paper. Despite the elimination of these cases, the incidence of acute nephritis is very much the same in these northern and southern hospitals.

AGE INCIDENCE

Since acute nephritis is a disease chiefly of childhood and early adult life, it was felt necessary to compare the age groups in the two latitude areas studied in order that this possible source of error might be avoided.

Chart 1 shows the percentage age incidence of the northern and southern cases of acute nephritis at different age periods. It is seen from this graph that the number of cases in each age classification is approximately the same for the two groups. Confirmatory of previous observations [3] on this point, it is noted that about half the cases occur before the age of 11 years and 70 per cent appear before the age of 21.

SEX INCIDENCE

Chart 2 shows the sex incidence in the two groups of cases studied. The values for the North and South are almost identical and illustrate that the incidence of acute glomerulonephritis is about twice as frequent in the male as in the female. Osman [3] has shown that the preponderance of males over females affected by this disease is significant in every age group except that from 16 to 20 years.

SEASONAL INCIDENCE

Chart 3 shows that acute glomerulonephritis in the northern hospitals studied is chiefly a disease of the late winter and early spring, the high points being in February, March and April. In this period hemolytic streptococcus disease reaches its peak in the North. The curve for the seasonal incidence of acute nephritis in the South is much flatter than that for the northern hospitals. The high rates occur in January and February with a depression of the rate from March through July and a secondary rise in August. The explanation for the increase in the frequency in January to February may be dependent on the early onset of spring in the South.

NATURE OF THE PREVIOUS INFECTION IN ACUTE GLOMERULONEPHRITIS

A study was made of the type of preceding infection in the histories analyzed. There were a number of cases in the southern hospitals in which available data gave no information as to the presence or absence of a

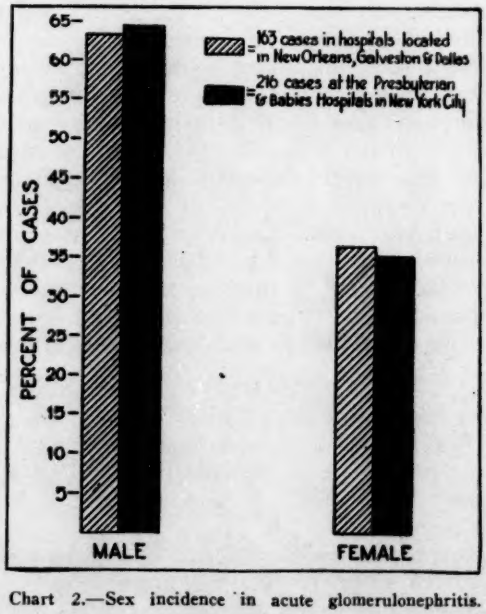

Chart 2.—Sex incidence in acute glomerulonephritis.

preceding infection. There was no definite statement in this group of histories ruling out the fact in question.

Chart 4 illustrates the incidence in percentages of all the infectious prodromes in the cases of acute nephritis in the North and in the South. In many instances, individual case histories recorded multiple infections such as acute tonsillitis and acute cervical lymphadenitis. Since it is common knowledge that such infections as cervical lymphadenitis, otitis media

3. Osman, A. A.: Guy's Hosp. Rep. **79**: 1 (Jan.) 1929.

and acute mastoiditis are usually associated with a preceding pharyngitis, it was considered advisable to select the most significant single one of the infections noted. For example, if in a patient's history it was found that sore throat, otitis media and mastoiditis had been present, mastoiditis was selected as the chief infection preceding the onset of acute nephritis. This method was obviously inaccurate; but, since the same method was used in the study of the northern and the southern cases, it is believed that the results are comparable.

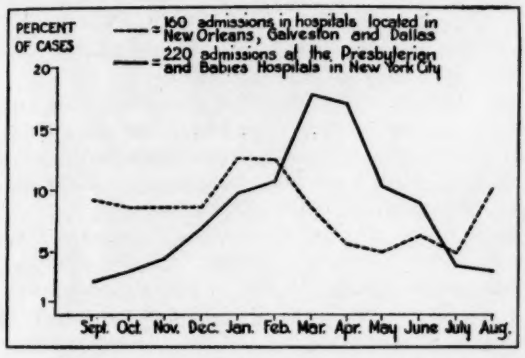
PERCENT OF CASES
—— = 160 admissions in hospitals located in New Orleans, Galveston and Dallas
—— = 220 admissions at the Presbyterian and Babies Hospitals in New York City
20
15
10
5
1
Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug.

Chart 3.—Monthly incidence of acute glomerulonephritis. Percentage of cases in southern and New York hospitals. (Since two of the New York patients were admitted twice for acute glomerulonephritis, the figure 220 is used instead of 218.)

It would seem from chart 4 that the same type of infection precedes the onset of acute glomerulonephritis in both northern and southern patients. Every type of prodromal infection noted in the records has been included in this chart. It is probable that if more data were available in the 22 per cent of the southern cases classified as "data for preceding infection neither positive nor negative" the variations between the two comparative groups would not be as large as the chart depicts. In the northern and southern groups there are only 7.8 per cent and 6.4 per cent of cases respectively in which a preceding infection has been definitely denied.

Löhlein [4] in 1907 stated that the vast majority of cases of acute glomerulonephritis followed a streptococcic infection. Longcope, O'Brien, McGuire, Hansen and Denny [5] reviewed the facts on the subject collected by Volhard and Fahr, Hill and others and have reached a similar conclusion. Their bacteriologic and immunologic studies strengthen this opinion. Osman [6] showed that infection of the upper respiratory tract was the outstanding prodromal feature in acute glomerulonephritis. In 1928 Rake [7] stated that "99 per cent of cases of nephritis follow a streptococcal infection."

The chart shows that the type of preceding infection in both groups is for the most part that which is presumably caused by the hemolytic streptococcus. In a large number of our cases there is evidence of a deep infection by the hemolytic streptococcus. Prominent among such types of pathologic changes are cervical lymphadenitis, peritonsillar abscess, otitis media and mastoiditis.

It is surprising to note the relatively minor rôle played by scarlet fever in initiating acute glomerulonephritis in this series of cases. Murphy, Grill and Moxon [8] have recently concluded that "scarlet fever can no longer be looked upon as the chief cause of glomerular nephritis."

In addition to the series of infections presumably due to the hemolytic streptococcus, the case histories show that in a small percentage of the cases the attack of nephritis has been preceded by an inflammatory process due to the pneumococcus or staphylococcus. The studies of Neale [9] and Blackman and Rake [10] and others would lend support to the conception that the pneumococcus may initiate the syndrome of acute nephritis in children. In our series there are seven cases of acute glomerulonephritis in adults apparently related to a preceding pneumococcic infection. Evidence for a concomitant hemolytic streptococcus infection in this group is absent. A discussion of the problem is given in a previous paper.[11]

COMMENT

A previous paper [1] contains a comparative study of the geographic distribution of rheumatic fever, scarlet fever and acute glomerulonephritis in North America. The admission rates for rheumatic fever and acute glomerulonephritis were determined in twenty-four hospitals distributed throughout the United States and southern Canada. The figures for scarlet fever were obtained from the standard public health reports, and the conclusions were based on the statistical studies of Schroeder and Longacre.[12] It was deduced from these facts that although the case frequency of scarlet fever and rheumatic fever was lower in the southern latitudes than in the northern latitudes, the yearly medical hospital admission rate for acute glomerulonephritis did not vary significantly in the four latitude regions studied.

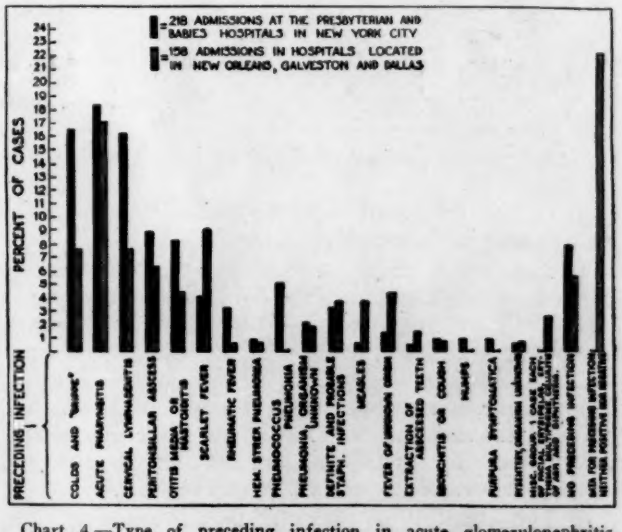

Chart 4.—Type of preceding infection in acute glomerulonephritis. Percentage of cases in southern and New York hospitals. Only the single most pronounced infection is shown for each patient.

In order that the problem might be studied with more accurate data, the individual case histories of patients with acute glomerulonephritis have been reviewed in two northern and four southern hospitals. The results of this investigation have shown that the case frequency is about the same in these two groups

4. Löhlein, M.: Ueber die entzündlichen Veränderungen der Glomeruli der menschlichen Nieren und ihre Bedeutung für die Nephritis, Leipzig, S. Hirzel, 1907.
5. Longcope, W. T.; O'Brien, D. P.; McGuire, J. M.; Hansen, C. C., and Denny, E. R.: Tr. A. Am. Physicians **42**: 114, 1927.
6. Osman, A. A.: Guy's Hosp. Rep. **75**: 306 (July) 1925.
7. Rake, G. W.: Guy's Hosp. Gaz. **42**: 263 (June 16) 1928.
8. Murphy, F. D.; Grill, John, and Moxon, G. F.: Acute Diffuse Glomerular Nephritis, Arch. Int. Med. **54**: 483 (Oct.) 1929.
9. Neale, A. V.: Brit. M. J. **2**: 891 (Nov. 17) 1928.
10. Blackman, S. S., and Rake, G.: Bull. Johns Hopkins Hosp. **51**: 217 (Oct.) 1932.
11. Seegal, David: Arch. Int. Med., to be published.
12. Schroeder, H. A., and Longacre, A. B., to be published.

of hospitals. This parallelism does not depend on age or sex factors. It has been shown furthermore that the type of preceding infection is similar in the two groups of cases. The conclusions drawn in the previous paper are therefore confirmed by the more accurate data available in this study.

Despite the fact that acute glomerulonephritis appears to be as frequent in the selected group of southern hospitals as in the northern hospitals and that the preceding infection in both regions seems to be one chiefly related to the hemolytic streptococcus invasion, it has been shown that the case frequency in the South for the known hemolytic streptococcus disease scarlet fever and the probable hemolytic streptococcus disease rheumatic fever are diminished as compared with the North. This observation would suggest that, if all three diseases are related to a preceding hemolytic streptococcus infection, there must be factors other than a specific hemolytic streptococcus to account for the lack of parallelism between the geographic distribution of these three diseases.

CONCLUSIONS

1. The case histories of 216 cases of acute glomerulonephritis at the Presbyterian and Babies hospitals in New York City have been compared with 163 case histories of the same disease distributed at the John Sealy Hospital, Galveston, Texas; the Touro Infirmary, New Orleans, and the Baylor and Parkland hospitals, Dallas, Texas.

2. In the years studied there were approximately 35,000 admissions to the medical wards in the two groups of hospitals.

The medical admission rate for acute glomerulonephritis was 0.62 per cent in the northern hospitals and 0.47 per cent in the southern hospitals. Allowing for a variation in the admission rules at the various hospitals, the case frequency of the disease in the two groups of hospitals is closely parallel.

3. The age groups of the northern and southern cases are similar. About 50 per cent of the cases occurred before the age of 10 years, 70 per cent before the age of 21.

4. In both groups of cases the disease is almost twice as frequent in the male as in the female.

5. The type of infection preceding the bout of acute glomerulonephritis is much the same for the two groups. The form of the infection is that which is usually associated with tissue invasion by the hemolytic streptococcus. Many of the patients in both groups manifest a deep infection such as acute cervical lymphadenitis, peritonsillar abscess, otitis media and acute mastoiditis. Other preceding infections noted were chiefly those due to the pneumococcus and the staphylococcus.

6. The data in a previous paper [1] showed that, although the reported medical admission rate for acute glomerulonephritis was similar in twenty-four hospitals in four latitude regions, the case frequency for two other diseases chiefly of hemolytic streptococcus origin, scarlet fever and rheumatic fever, was less in the South than in the North.

The aggregate evidence suggests that, if scarlet fever, rheumatic fever and acute glomerulonephritis are incited by the hemolytic streptococcus, other factors in addition to a common specific bacterium must exist to account for the lack of parallelism between the geographical distribution of the three diseases.

620 West One Hundred and Sixty-Eighth Street.

SIMMONDS' DISEASE (PITUITARY CACHEXIA)

REPORT OF A CASE IN WHICH THE PATIENT RESPONDED TO ANTERIOR PITUITARY-LIKE PRINCIPLE OF PREGNANCY URINE

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BRAINERD, MINN.

Simmonds [1] originally described the entity of pituitary cachexia in 1914. More than fifty cases were reported in the German literature from 1914 to 1933. The first cases reported in the American literature were by Graham and Farquharson [2] in 1931.

The disorder is due to a disturbance of the anterior lobe of the pituitary. Various processes, including tumors, cysts, emboli, thrombosis, trauma, tuberculosis and syphilis, have been held responsible for the disturbance in this portion of the gland.

The common misconception still exists that pituitary disorders are due solely to tumor or some other organic disease of the gland. While in many cases previously reported the disease has been accompanied by gross pathologic changes in this organ, Engelbach [3] maintained that many pituitary cachexias, as well as other forms of pituitary dysfunction, may be due to a transitory functional disorder of the anterior lobe. He thought it probable that severe deficiencies of the hypophysis occur as frequently from aneoplastic disorders as from other causes. This fact is corroborated by many writers and further by the effect of substitution therapy in a number of cases with excellent results.

The syndrome has been noted in several cases following repeated labors, especially when they are accompanied by hemorrhage. Maresch [4] first called attention to this fact and suggested that a functional exhaustion of the anterior pituitary was a basis for the etiology in these cases. A hereditary factor has been suggested by several writers, and there is considerable evidence that this may have been a factor in a number of cases.

Clinically, these cases have been characterized by weakness, emaciation, mental lethargy, somnolence, premature aging, trophic changes in the skin, loss of pubic and axillary hair, low metabolic rate, hypotension and disturbances of sexual functions, including amenorrhea.

The onset is insidious, and the syndrome may develop in from a few months to several years. The disease is progressive and if untreated the prognosis is exceedingly grave. The course, however, may run over a considerable period. Oppenheimer [5] has observed a patient with this disorder over a period of twenty years.

Emaciation is the most striking feature, and the cachexia usually exceeds that found in other conditions. Loss of weight is constant, and losses of from 50 to 60 pounds (23 to 27 Kg.) are common. Weakness follows the loss of weight with a concomitant loss of sexual function. In women, amenorrhea is often the first symptom noted. The recession of the secondary sex characters is a late feature. Mental symptoms are common. These may be so severe that the patient is first seen by the psychiatrist. Mental lethargy and somnolence are rather constant symptoms. The loss

From the Brainerd Clinic.

1. Simmonds, Morris: Deutsche med. Wchnschr. **40**: 322, 1914.
2. Graham, D. A. L., and Farquharson, R. F.: Cases of Simmonds' Disease, abstr. J. A. M. A. **96**: 1987 (June 6) 1931.
3. Engelbach, William: Endocrine Medicine, Springfield, Ill., Charles C. Thomas **3**: 488, 1933.
4. Maresch, B.: Verhandl. d. deutsch. path. Gesellsch. **17**: 202, 1914.
5. Oppenheimer, B. S., in discussion on Graham and Farquharson.[2]

of pubic and axillary hair is a characteristic feature. Loss of eyebrows and eyelashes has also been noted by a number of writers.

The basal metabolic rate is consistently depressed and a finding of from minus 25 to minus 30 per cent is not uncommon. A case in which the basal metabolic rate was minus 40 per cent has been reported by Brougher.[6] This finding tends to confuse the disorder with primary hypothyroid states, some of which are also attended by cachexia.

Premature aging is not an early feature but one that appears after the syndrome is well established. Hypotension is always present, and there is usually a bradycardia. Anemia is a frequent finding and the leukocyte count is often low. Eosinophilia is occasionally encountered.

Various other features have been present in many cases. The most common of these are disturbance of carbohydrate metabolism, disturbance of water balance, polyuria, polydipsia, hypothermia, headache, dizziness and fainting attacks. Dental caries has been noted by many writers and in some instances the teeth have been lost without evidence of caries.

Women appear to be more susceptible to the disease than are men in the ratio of about 5 to 1. It is most common in the fourth decade of life, though cases have been reported as early as the ninth year [7] and as late as the sixty-ninth.[8]

DIFFERENTIAL DIAGNOSIS

The differential diagnosis is usually not difficult unless the disease is accompanied by some other disorder giving rise to extreme cachexia. Cachexia due to tuberculosis and carcinoma is not, as a rule, accompanied by a markedly depressed metabolic rate, loss of pubic and axillary hair, loss of sexual functions and a recession of secondary sex characters. Primary hypothyroid cachexia responds readily to thyroid substitution alone.

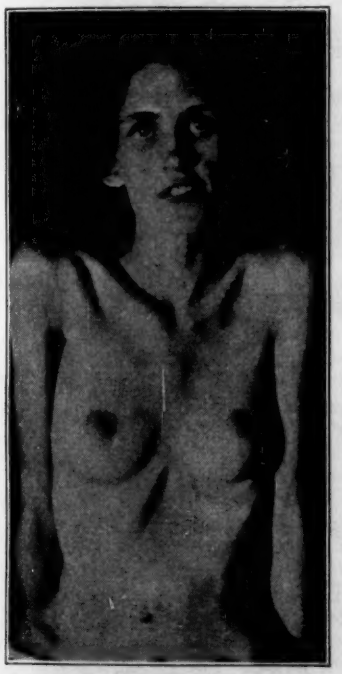


Fig. 1.—Appearance of patient, Aug. 1, 1933; weight, 81 pounds (36.7 Kg.).

Pluriglandular sclerosis may offer some difficulty. True cases of this rare condition show the skin and facies of myxedema and a pigmentation of the skin not found in Simmonds' disease. Pluriglandular sclerosis usually affects all the endocrine glands simultaneously and presents features in accordance with this involvement. Some cases may offer considerable difficulty in diagnosis.

Myxedema should offer no problem in differentiation. The two conditions have little in common, with the exception of the low basal metabolic rate. Thyroid therapy produces little or no beneficial effect in Simmonds' disease.

6. Brougher, J. C.: Endocrinology **17**: 130 (March-April) 1933.
7. Simmonds, Morris: Deutsche med. Wchnschr. **42**: 190, 1916.
8. Meng, H.: Frankfurt. Ztschr. f. Path. **36**: 650, 1928.

The differential diagnosis between Simmonds' disease and Addison's disease is not always easy. Some of the clinical features of Addison's disease such as asthenia, anorexia, loss of weight, dizziness and hypotension are also features of pituitary cachexia. The pigmentation in Addison's disease should aid in the differentiation. The response to the cortical hormone in Addison's disease and the response to pituitary therapy in Simmonds' should be a valuable aid in the differential diagnosis.

Simmonds' disease should be suspected in every case of marked loss of weight in which no other cause for the emaciation can be discovered. The clinical features of the disease should enable one to make the diagnosis in nearly all cases. The response to pituitary therapy is a valuable aid in early diagnosis. The fact that many cases are due to neoplastic causes should not prevent one from giving pituitary therapy a suitable trial. In Brougher's case the condition, due to an adenoma of the pituitary, responded favorably to substitution treatment.

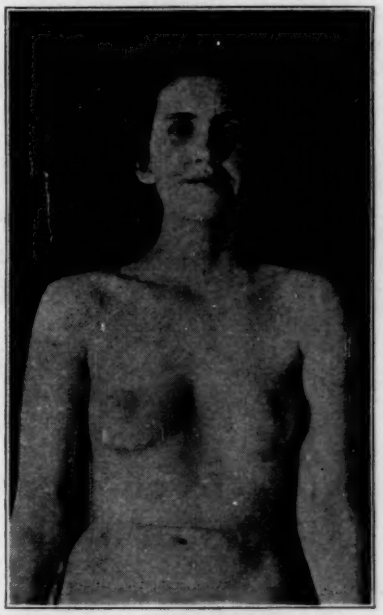


Fig. 2.—Appearance of patient, March 28, 1934; weight, 135 pounds (61 Kg.).

The following case is fairly typical of Simmonds' disease. While the diagnosis remains unverified so far as pathologic changes are concerned, the response to treatment and ultimate recovery are significantly informative.

REPORT OF CASE

A school girl, aged 17 years, had lived in Minnesota during her entire life. Her father died as a result of an accident. Her mother and one sister were living and well. There had been no family tendencies and no constitutional diatheses. She had suffered from diphtheria and whooping cough in early childhood. Her menses began at the age of 15 years and had always been irregular. At the age of 15 she began to grow very rapidly and attained her present height at that age. The development of the secondary sex characters was slow. She had little interest in the opposite sex.

The chief complaints were loss of weight, weakness, amenorrhea, somnolence, mental lethargy, falling of the hair (pubic, axillary, eyebrows, eyelashes and hair on the head), premature aging and dryness of the skin.

Five and one-half months previously the patient had stopped menstruating. Following this there was a loss of appetite and a resultant loss of weight. She noticed that her school work was becoming difficult. This was unusual, for she had always been an excellent student. The condition gradually became worse, she became weak, the skin became dry, and the pubic and axillary hair began falling out.

In June, three and one-half months following the onset of the syndrome, the condition became alarming. She was losing weight rapidly; the weakness was more marked; the somnolence and mental lethargy were becoming more prominent; falling of the hair had extended to the eyebrows, eyelashes and hair on the head, and the aging was becoming more apparent.

When I first saw the patient in August, five and one-half months following the onset, anorexia was almost complete. The ingestion of food consisted of about one-half glass of milk a day. She had spent the previous two weeks at a summer camp and had lost 14 pounds (6.4 Kg.) during that time. Mental lethargy and somnolence were quite marked; the hair was falling out rapidly and the premature aging was prominent. She had lost 59 pounds (26.8 Kg.) in a period of five and one-half months.

A thorough search was made for a possible psychologic factor. None could be discovered. The girl was happy in spite of her condition and was willing to cooperate in every way.

Previous treatment by several physicians had consisted of desiccated thyroid, cod liver oil, rest, sun baths and tonics.

On examination, Aug. 1, 1933, the most striking features were emaciation and an aged appearance. The girl appeared much older than 17. The hair was dry and brittle and could be pulled out easily. Her height was 5 feet 7 inches (170 cm.) and her weight 87 pounds (39.5 Kg.). The skin was dry but showed no abnormal pigmentation. There was no wrinkling of the face and no increase in facial hair. The eyes were sunken, the pupils reacted normally to light and in accommodation, and the visual fields were normal. The fundi appeared to be normal. The nose and throat were normal. The tonsils had been cleanly removed. The lateral incisors were small; otherwise the teeth were normal and in excellent condition. Mucous membranes were of good color and appeared to be normal. The thyroid was not palpable and there was no enlargement of the cervical glands. The breasts were atrophic. The chest showed no abnormalities. The heart dulness was within normal limits, the rate 65 per minute; rhythm was regular and no murmurs were heard. The abdominal organs could not be palpated. No abnormal masses were palpable. A vaginal examination was not made. The reflexes were normal. There was no tremor. The extremities were not edematous.

Fig. 3.—Roentgenogram of sella turcica.

The blood pressure was 85 systolic, 60 diastolic (Tycos recording sphygmomanometer). The urine was normal at all examinations. The red blood cell count was 4,630,000, white cell count 5,100, and hemoglobin 80 per cent. The blood Wassermann reaction was negative. The basal metabolic rate was minus 27 per cent. Fasting blood sugar was 120 mg. per hundred cubic centimeters. The stool examination gave negative results.

Roentgenograms were made by Dr. Daniel M. Clark. The thoracic cage was normal. The diaphragms were smooth and there was no free fluid in the pleural cavity. The hilar shadows and bronchovesicular markings had a normal appearance. The lung fields were entirely free of parenchymal pathologic changes. The mediastinum was not widened or displaced. The heart was within normal limits in size, shape and position.

Lateral studies of the sella turcica showed a pituitary fossa of normal size and contour. The clinoidal processes were well formed and there was no bridging. No evidence of a neoplastic process was seen. No adventitious calcification was noted.

The conclusion was made that there was no roentgen evidence of pathologic changes in the chest or sella turcica.

The diagnosis was Simmonds' disease (pituitary cachexia), with secondary hypo-activity of the thyroid, ovaries and adrenal cortices.

The patient was given intramuscular injections of anterior pituitary-like gonadotropic principle of pregnancy urine (Follutein, Squibb) every other day in doses of 50 rat units. Desiccated thyroid was given by mouth in doses of one-half grain (0.03 Gm.) three times a day. This treatment was continued for ten days.

The patient continued to lose weight rapidly and there was no improvement. The weight had dropped to 81 pounds (36.7 Kg.). The desiccated thyroid was discontinued and the gonadotropic principle of pregnancy urine was increased to 150 rat units every other day.

Four days following the increase in dosage, the patient ate her first meal in months. In a week she had begun to gain weight and was much brighter mentally, the somnolence was much improved and she felt better in every way.

The gonadotropic principle of pregnancy urine was continued in the same dosage of 150 rat units every other day until September 18. By that time the patient had gained 10 pounds (4.5 Kg.), there was no somnolence, the appetite was excellent, the hair had stopped falling out and new hair was beginning to grow in again, she had plenty of "pep" and the skin was normal. The aged appearance was beginning to return to that of youth.

The patient returned to her home in St. Paul and through the cooperation of Dr. M. A. Shillington, the gonadotropic principle of pregnancy urine was continued. The dosage, however, was decreased to 75 rat units and the intervals between injections were gradually lengthened. The last administration of the gonadotropic substance was given on December 14. During this time she had continued to improve and her condition, Jan. 1, 1934, was believed to be normal. She entered the University of Minnesota shortly after this and maintained an A average at that institution during the following quarter.

The patient received approximately 5,000 rat units of gonadotropic principle of pregnancy urine in a period of four and one-half months.

On examination, March 28, the weight was 133 pounds (60.3 Kg.), a total gain of 52 pounds (23.6 Kg.). The height was 5 feet 8 inches (173 cm.), an increase of 1 inch (2.5 cm.). The skin appeared to be normal, the cheeks were rosy, and the hair was growing rapidly and was thicker than at any time previous to the onset of the syndrome. There was a marked improvement in the secondary sex characters; the breasts were larger, the pubic hair was much more abundant, and the labia had increased in size. The blood pressure was 110 systolic and 85 diastolic. The basal metabolic rate was plus 4 per cent. No abnormalities could be found, and the girl appeared normal in every way. She stated that she could not remember ever feeling as well and that she had more energy and vitality than she had had in years. There had been a definite turn in the feeling toward the opposite sex.

On reexamination, November 30, the weight was 129 pounds (58.5 Kg.) and the height 5 feet 8 inches. No abnormalities could be found, and the patient stated that she never felt better than she did at present. August 24, she had her first menstruation since the onset of the illness. The period was normal and lasted four days. Three subsequent menstrual periods were regular and normal.

During the past few years, several cases have been reported in which substitution therapy has given striking results. Among these are the cases of Calder,[9] Striker,[10] Constantini,[11] Hürthle,[12] McGovern[13] and

9. Calder, R. M.: Pituitary Cachexia (Simmonds' Disease) Treated with Anterior Pituitary Extract, J. A. M. A. **98**: 314 (Jan. 23) 1932.
10. Striker, Cecil: A Case of Simmonds' Disease (Cachexia Hypophyseoprivea) with Recovery, J. A. M. A. **101**: 1994 (Dec. 16) 1933.
11. Constantini, F.: Policlinico **38**: May 1931.
12. Hürthle, R.: Med. Klin. **28**: 1637 (Nov. 18) 1932.
13. McGovern, B. E.: Endocrinology **16**: 402 (July-Aug.) 1933.

Brougher.[6] In most of these cases, an extract of the whole anterior pituitary gland was used.

In the case here reported, a sterile glycerin solution of anterior pituitary-like gonadotropic principle of pregnancy urine was used. As to whether the substance is of placental or hypophyseal origin has not been definitely determined. It is difficult to explain the action of the anterior pituitary-like gonadotropic substance in this case. The observations, however, would lead one to believe that it is certainly more than an activator of the sex hormone, and there is a possibility that it produces a definite stimulation of the hormone activity of the entire anterior lobe of the pituitary gland.

An anterior pituitary extract was available for use when the girl was first seen. The extract contains the growth factor together with the sex and thyrotropic complementary factors of the hypophysis. A marked increase in height, within a few months, was obtained in two cases in which the patient had been previously treated with this extract. The girl had already attained the height of 5 feet 7 inches at the age of 17 years, and it is obvious that the use of the extract containing the growth factor would have been objectionable in this case.

Desiccated thyroid was given in small doses in the early treatment of the patient. It is thought by some investigators that better results may be obtained in pituitary disorders when desiccated thyroid is given with pituitary therapy, especially when the basal metabolic rate is low. The results with thyroid therapy alone in the treatment of Simmonds' disease have been without beneficial effect.

When one considers the etiology of Simmonds' disease one must remember that it may be caused by transitory functional disorder of the anterior lobe. Among conditions causing such disorders may be focal infections, constitutional factors and functional exhaustion of the cells of the anterior lobe of the pituitary body. It is possible that mild cases of Simmonds' disease of this type are common and are unrecognized. Von Bergmann [14] considers the most important and most frequent form of emaciation a condition that has been referred to as "hypophyseal emaciation." He is convinced that the anterior lobe of the pituitary body is an important factor in this form of emaciation and considers the extracts of the anterior lobe the most effective therapy. The condition of "hypophyseal emaciation" is similar in many respects to Simmonds' disease, and it is possible that it is a mild form of Simmonds' disease.

The etiologic factor in the case here reported was probably a functional disorder of the anterior lobe. This is suggested by the normal appearance of the sella turcica and the response to therapy.

SUMMARY

Simmonds' disease is probably more common than is generally realized.

The syndrome may be caused by transitory functional disorder of the anterior pituitary body as well as by neoplastic involvement.

In a girl, aged 17 years, suffering from Simmonds' disease, the treatment consisted of injections of anterior pituitary-like gonadotropic principle of pregnancy urine for four and one-half months and small doses of desiccated thyroid for a short time. Improvement followed the increase in dosage of the gonadotropic substance.

The clinical features of the syndrome, together with more recent knowledge of the anterior hypophysis, indicate that the entire anterior hypophysis is involved in Simmonds' disease. It is possible that the hormone activity of the entire anterior lobe of the hypophysis is stimulated by gonadotropic substance.

First National Bank Building.

14. von Bergmann, G.: Deutsche med. Wchnschr. **60**: 123 (Jan. 26) 1934.

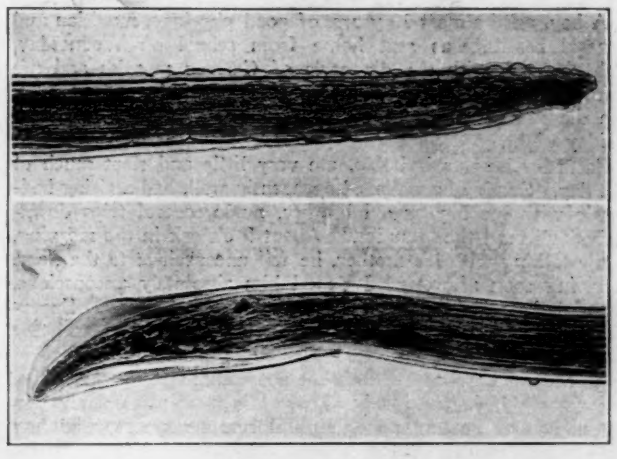
Clinical Notes, Suggestions and New Instruments

A GONGYLONEMA INFESTATION IN MAN

C. H. WAITE, B.A., AND RACHAEL GORRIE, M.S., MOBILE, ALA.

Gongylonema has been found in man in such rare instances that we believe that the circumstances of the isolation and identification, as well as a description, of one found by us may be of interest.

The infestation is common in ruminants, swine and other animals,[1] in which it is found in the upper portion of the digestive tract, and usually in the esophagus. Only seven cases have been found in man, the most recent by Stiles [2] in 1928. Pane has found one, Alessandrini one,[3] Ward one,[4] Stiles three, and Ransom one. In all human cases the worm has been found in the oral cavity, where it burrows beneath the mucosa. The patient is conscious of its migrations and it can be seen with the naked eye.



Anterior (above) and posterior (below) extremities of Gongylonema (× 75).

L. H., a white man, aged 30, brought a worm to our laboratory, stating that he had withdrawn it with his fingers from the "roof of his mouth." He had suffered with a sore mouth for three months. Although the man occasionally felt an indefinite movement when the worm burrowed beneath the oral mucosa, no specific symptoms developed, and he stated that the only effect he felt was nervousness. Faust states that in one case an antiseptic mouth wash stimulated the worm to work its way out of its tunnel so that it was removed with the fingers. It is quite possible that this was true in our case, as treatment for Vincent's angina had been employed for several weeks before extraction of the worm. An examination of the man's palate was not made at the time the worm was extracted, but one week later no evidence of the tunnels or paths caused by the worm beneath the mucous surface could be seen.

From the Alabama State Board of Health Branch Laboratory.

1. Faust, E. C.: Human Helminthology, Philadelphia, Lea & Febiger, 1929.
2. Stiles, C. W., and Baker, C. E.: A Fifth Case of Gongylonema Hominis in Man in the United States, J. A. M. A. **91**: 1891 (Dec. 15) 1928. Stiles, C. W.: Gongylonema Hominis in Man, Pub. Health Rep. **36**: 1177 (May 27) 1921; Annual Report of the Surgeon General of the Public Health Service for 1918, p. 64.
3. Alessandrini, G.: Nuovo caso di parassitismo nell' uomoda Gongylonema; Bull. d. r. acad. med. di Roma **40**, number 4, 1914.
4. Ward, H. B.: Gongylonema in the Rôle of a Human Parasite, J. Parasitol. **2**: 119-125 (March) 1916.

The worm is, we believe, the first male Gongylonema found in man and was described as follows: It was a grayish white, 32 mm. long by 0.1 mm. in width, with the posterior extremity slightly curved. The mouth was small and circular, surrounded by a raised cuticular rim 15 microns in diameter. From the mouth caudad the body was embossed with eight longitudinal rows of cuticular scutes extending for 0.47 mm. These bosses or scutes are the characteristic feature of the Gongylonema. They are quite regular in succession and uniform in size.

The posterior end showed distinct caudal alae supported by ten pairs of pedunculated papillae. The copulatory spicules were unequal in length, one measuring 50 microns, while the other was 16.5 mm. The gubernaculum was discernible. The anus was 0.14 mm. anterior to the caudal tip.

Gongylonemas isolated from man, swine and cattle are very similar, but the species have been given a variety of names by various investigators. Until definite dissimilar structures in the species are established, we are inclined to think, as do Faust and Ward, that the most appropriate name for the nematode would be Gongylonema pulchrum (Molin, 1857).

It is now some six weeks since L. H. brought the worm to us. His nervous symptoms are gone, his palate is normal and he has found no more worms. In all but one of the previous cases, only one worm has been found; from this evidence it seems safe to assume that the infestation in man is accidental.[1]

ENCEPHALITIS COMPLICATING GERMAN MEASLES

REPORT OF CASE

H. O. SKINNER, M.D., ST. PAUL

A boy, aged almost 10 years, of good physique, nutrition and general health, was sent home from school on Wednesday, Feb. 6, 1935, with the diagnosis of German measles and the information that a physician was not needed for this disease. He did not seem very sick and his rash was about gone by Friday night.

Saturday he was irritable, ate very little and slept much of the day. Sunday he wakened apparently well, had a rising bedtussle with his 5 year old brother, made several trips downstairs and read the "funnies." About 9 o'clock in the morning, while talking with his mother, he fell unconscious to the floor. Arriving soon afterward I found him absolutely unconscious, with pupils widely dilated, equal and without reflex. Superficial reflexes were gone; the patellar was faint, and the Babinski sign was positive. The eardrums were normal in appearance. He was restless but not convulsive, and resistive but not rigid, except for his jaw. His neck particularly was not rigid and he had no meningeal symptoms. He had had involuntary evacuation of bowels and bladder but his pulse was only 72 and the temperature (rectal) 98.6 F.

He was given morphine by hypodermic at once and again that night, at which time he was still very restless, with no change in his other symptoms.

Monday morning the pupils were sluggishly reactive to light, and the Babinski sign was doubtful. Lumbar puncture gave 1 ounce of fluid under moderate pressure; it was clear, the Nonne reaction was negative, and it contained 13 cells. Urinalysis at this time showed specific gravity, 1.018; the urine was clear and acid, and negative for albumin and sugar. Microscopic examination was negative. A neurologic consultant confirmed my diagnosis of encephalitis but said that he had seen a few cases of encephalitis complicating German measles which were distinguished from the lethargic type by their very short and mild course.

The boy was given an enema of magnesium sulphate followed by retention enemas of dextrose in saline solution. On the evening of the second day of unconsciousness he ran a little fever.

Tuesday his temperature reached 103 F., but it was normal by the next morning and remained so. He was still sufficiently restless for morphine and unconscious but he did respond irritably to being moved. His rigid jaw relaxed, he yawned several times and was able to swallow.

Wednesday he looked about, asked for food but didn't eat it. Restlessness lessened and the pulse, temperature and reflexes were normal.

Thursday he was a little confused and complained of a headache but was otherwise normal. He had no double vision.

Friday, the sixth day from the very first manifestation of illness and the fifth from the severe onset, found him well but for weakness and a slight headache when sitting upright. Since then he has remained perfectly well in every way.

Lowry Building.

Special Article

GLANDULAR PHYSIOLOGY AND THERAPY

THERAPEUTICS OF THE THYROID

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NOTE.—*This article and the articles in the previous issues of* THE JOURNAL *are part of a series published under the auspices of the Council on Pharmacy and Chemistry. Other articles will appear in succeeding issues. When completed, the series will be published in book form.*—ED.

One dictionary defines therapeutics as "the practical branch of medicine dealing with the treatment of disease." In this article "therapeutics" is interpreted to include both treatment of diseases of the thyroid and treatment of any diseases by means of the gland. The treatment of hypothyroidism, for example, is substitution therapy with thyroid, but there are also certain nonthyroid disorders in which thyroid may be used as a drug for the sake of its pharmacodynamic action, just as epinephrine is used in asthma. The latter is symptomatic, not specific substitution therapy. It is treatment with a gland secretion, not treatment of a gland disease. Both will be discussed in this article.

TREATMENT OF THYROID DISEASES

The treatment of thyroid diseases or disorders resolves itself chiefly into that of excessive function of the gland, insufficient function of the gland, and local mischief caused by the gland.

In identifying methods to meet these several indications it will be well to think always in terms of known thyroid physiology, or in those of the anatomic relations of that organ.

The sole function of the thyroid, so far as is known, is the manufacture of the hormone thyroxine, but the physiologic actions of the substance are varied and have to do with metabolism, homeostasis, irritability, differentiation and growth.

For the purpose of discussion it will be convenient to consider the clinical pictures, associated with the thyroid, under the following headings:

1. Thyrotoxicosis—toxic goiter.
2. Myxedema and cretinism.
3. Endemic goiter; sporadic colloid goiter.
4. Nodular goiter.
5. Malignant goiter.
6. Inflammation of the thyroid.
7. Anomalies of the thyroid.

Of these several groups, the first two include lesions producing gross alteration in thyroid function and, therefore, constitutional manifestations both characteristic and important. The remainder include lesions for the most part of local significance. By the term "goiter" is meant enlargement of the thyroid from any cause. It is used in a purely clinical sense and has no pathologic connotation. This is consistent with common use in this country today and is justified by the fact that the

pathologic nature of an enlargement often cannot be identified clinically. "The patient has a goiter, it is (or isn't) accompanied by hyper- (or hypo-) function," is sometimes all the physician can say with certainty as the result of his purely clinical studies. By the term "thyrotoxicosis" is meant the toxic state resulting from an excessive supply of thyroxine. It can be induced by the administration of thyroid or thyroxine but exists spontaneously only in conjunction with thyroid hyperplasia; hence the term toxic goiter. From the therapeutic side, nothing is gained by trying to split toxic goiter into two or more types. The treatment for all is the same.

1. *Toxic Goiter.*—The indication is to abolish the hyperfunctioning of the gland. To date only two procedures are known that can accomplish this permanently: irradiation and surgical resection of the thyroid. It is to be borne in mind that the disease may subside or even disappear spontaneously in time. Also, it should be stated emphatically that iodine characteristically produces a marked amelioration in the intensity of the thyrotoxicosis, which, however, returns to its former state if the administration of iodine is stopped.

The response to iodine has come to be looked on as one of the cardinal manifestations of the disease.[1] Advantage can be taken of it not only in treatment but in diagnosis,[2] and probably in prognosis as well. It consists in a prompt fall in metabolic and pulse rates and improvement in the symptoms of thyrotoxicosis. It can be obtained at any time during the course of the disease but has no effect on the duration or direction of its progress. If a patient is kept continually under the influence of iodine, the course will be milder but not shorter than of one who is not. We[3] believe that there is no true refractoriness to iodine. The only people who do not respond to iodine are those who are either not thyrotoxic or those who, if thyrotoxic, are already iodinized. In but 3 per cent of our cases was there a failure to respond to iodine, and these could be explained on the basis that the drug was given at a time when the disease was increasing rapidly in severity and the iodine effect was merely to hold the status constant. In the management of toxic goiter, the physician must know whether his patient is iodinized or not iodinized, just as he must know whether his cardiac patient is digitalized or not digitalized. An adequate dose of iodine,[4] to attain full iodinization in toxic goiter, is contained in from 5 to 10 minims (0.3 to 0.6 cc.) of saturated solution of potassium or sodium iodide, given once daily. There is no special virtue in compound solution of iodine or other iodine preparations. Iodine seems to serve as iodine, regardless of chemical combination or route of entry. It may be administered by mouth, vein or rectum and is equally effective by all routes.[5]

Irradiation in some cases seems to put a permanent quietus on the hyperfunctioning of the thyroid. It may be given in the form of radium or roentgen radiation. Before 1923 (the date Plummer introduced the use of iodine), Holmes and I[6] recommended treatment with roentgen radiation in all cases. We found that in about one third it brought about a cure, in another third it produced improvement, and in another third it was without observable effect. We have lately looked up a number of patients treated ten or more years ago. It is of interest that, for the most part, the cures have proved permanent.[7]

Operations less extensive than subtotal thyroidectomy, in our experience, have generally proved inadequate to bring about either a complete or a lasting cure.[8] It is true that patients in the past who have had hemithyroidectomies may be entirely well after several years. This is because the surgical procedure improves the condition, and in time nature completes the cure. The thyrotoxicosis is not promptly and completely abolished, as it is in most cases in which subtotal thyroidectomy is done.

At the present time I believe that the best therapeutic program available is subtotal thyroidectomy in the fully iodinized subject. This program offers more promise of certain and prompt recovery than any other that I know. Irradiation, though sometimes effective, is unquestionably inferior. One of the strongest arguments for it in the past was that surgery was dangerous. The preoperative use of iodine has greatly diminished the risk of operation. The disease itself sometimes kills the unoperated patient. We have had six such deaths in ten years, a mortality of about 0.6 per cent.

Our routine procedure in toxic goiter is to put the patient to bed, observe the symptoms carefully and determine the basal metabolic rate every day or two until a horizontal level has been obtained. Iodine is then given for from ten to fourteen days and the effect on the symptoms and metabolic rate is noted. If a definite response to iodine is obtained, which means a drop of from fifteen to thirty points in the metabolic rate and improvement in symptoms, the patient is ready for operation. The operation is, if possible, a one stage subtotal thyroidectomy under nitrous oxide-oxygen or local anesthesia.

Patients who have not made a good response to iodine and patients who have been emotionally upset prior to operation are poor operative risks. They are more subject to postoperative toxic crisis or storm. Older persons are less good risks than young and those with cardiac complications less good than those without. In all cases, steps should be carried out preoperatively to insure a good store of glycogen in the liver. In the very toxic ones, intravenous dextrose should be given the day before and on the morning of the operation (a liter of 5 per cent); in others a high carbohydrate diet, with sugar candy, will serve. Sedation is accomplished by bromides, paraldehyde, morphine or amytal. Phenobarbital is undesirable, because thyrotoxic persons seem particularly subject to severe rashes.

Patients with gross congestive heart failure or permanent auricular fibrillation should be digitalized as well as iodinized before operation. When the metabolic rate is rising in spite of iodine, operation should be deferred. Active streptococcic throat infections or other active infections, including particularly respira-

1. Means, J. H.; Thompson, W. O., and Thompson, Phebe K.: On the Nature of the Iodine Reaction in Exophthalmic Goiter, Tr. A. Am. Physicians **43**: 146, 1928. Means, J. H.: Use of Iodine in Exophthalmic Goiter, Ann. Int. Med. **4**: 117 (Aug.) 1930.

2. Means, J. H.: Diagnostic Use of Iodine in Thyrotoxicosis, Ann. Int. Med. **7**: 439 (Oct.) 1933.

3. Means, J. H., and Lerman, Jacob: Action of Iodine in Thyrotoxicosis, with Special Reference to Refractoriness, J. A. M. A. **104**: 969 (March 23) 1935.

4. Thompson, W. O.; Brailey, A. G.; Thompson, Phebe K., and Thorp, E. G.: The Range of Effective Iodine Dosage in Exophthalmic Goiter, Arch. Int. Med. **45**: 261 (Feb.) 1930.

5. Lerman, Jacob, and Means, J. H.: Iodine in Exophthalmic Goiter: Comparison of Effect of Ethyl Iodide and Potassium Iodide with That of Lugol's Solution, Am. J. M. Sc. **181**: 745 (June) 1931.

6. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, Tr. A. Am. Physicians **37**: 198, 1922.

7. Pittman, H. S.: End-Results in Exophthalmic Goiter: Patients Treated in Preiodine Days, New England J. Med. **210**: 912 (April 26) 1934.

8. Richardson, E. P., and Means, J. H.: Results of Surgery and of Surgery Combined with Roentgen-Ray Treatment in Exophthalmic Goiter, Arch. Surg. **9**: 237 (Sept.) 1924.

tory involvement and active rheumatic infection, are also indications for postponement.[9]

Following operation, dextrose is again given intravenously to the patients who seem very toxic, or it may be given rectally and in conjunction with bromides. Iodine is continued until the patient is discharged from the hospital. During the immediate postoperative convalescence, inhalations of steam, flavored by compound tincture of benzoin, are very soothing to the irritated trachea. These should be given by means of a 3 foot piece of 1 inch rubber tubing, connected to the spout of a kettle containing the hot water and benzoin, which the patient places in his mouth and breathes through.[10] The water in the kettle, obviously, must not cover the inner opening of the spout. Paper cones and bags are unsatisfactory. Postoperative hypoparathyroidism (tetany) is treated by means of intravenous calcium chloride, in the dose of 5 cc. of 10 per cent solution, and calcium lactate or gluconate by mouth, 30 grains (2 Gm.) three times a day; laryngeal obstruction by means of intubation or tracheotomy, if necessary, and postoperative toxic crisis by intravenous dextrose, an oxygen tent, sedatives and cold sponging or packs.

Following discharge from the hospital, the patient is followed at gradually lengthening intervals for at least two years. This is for the purpose of detecting recurrent thyrotoxicosis, or myxedema or latent tetany.

Often mild symptoms of thyrotoxicosis persist for a few months after operation. These may be entirely controlled by small rations of iodine (potassium iodide 3 grains [0.2 Gm.] once daily or less). The indication is to omit the ration from time to time, and when no rise in basal metabolic rate or no return of symptoms occurs, the patient may be considered cured. More serious persistence or recurrence of thyrotoxicosis requires more drastic treatment. Irradiation may be tried or, if marked regrowth of goiter occurs, a second or even a third operation may be necessary.

Such a program at the Massachusetts General Hospital has given, in round numbers, the following results: Four out of five patients are cured. One out of five has persistent thyrotoxicosis. One out of ten requires further operation or irradiation. One out of 100 develops permanent myxedema requiring continued substitution therapy with thyroid.[11] Over a ten year period, the operative mortality in the public wards has been 1.1 per cent in the 97 per cent of the patients making good iodine responses, and 27.3 per cent in the 3 per cent not responding well to iodine. It was this finding that led us to conclude that a poor response to iodine is indication of poor operative risk.

The keeping of operative mortality down is more a matter of wise selection of patients and time of operation, and of preoperative and postoperative care, than it is of improving surgical skill. The operation itself is highly standardized and, in the hands of a properly qualified surgeon, easy and safe. There are unquestionably more good thyroid surgeons in the United States than in any other country, and the surgical technic here is more nearly perfected.

The experience at the Massachusetts General Hospital justifies the following conclusions: 1. If, after subtotal thyroidectomy, the basal metabolic rate drops to and remains within standard limits, off iodine, for two months, cure can be assured. 2. A standard basal metabolic rate, on iodine, two weeks after operation does not mean that cure can be assured. 3. A basal metabolic rate of plus 15, or higher, on iodine, two weeks after operation, usually means that the disease has not been effectively abolished.[11]

Of other therapeutic procedures in the management of toxic goiter, little need be said. Quinine hydrobromide has no longer any place. Quinidine may be used for fibrillation persisting after operation. Cytolytic serums and antihormonal substances have not yet impressed the profession sufficiently with their usefulness to lead to general adoption.

2. *Myxedema and Cretinism.*—In these states one is dealing with a loss of thyroid function. In adult myxedema the indication is to give a sufficient daily ration of thyroid to keep the patient free from symptoms. It is best to use the minimum dose that will accomplish this purpose. Nothing is gained by raising the basal metabolic rate to standard if the patient is free from symptoms (as is usually the case) at a decidedly lower level. In our experience, patients seldom have symptoms of myxedema when the basal metabolic rate is above minus 20.[12] From 1 to 2 grains (0.06 to 0.12 Gm.) of thyroid U. S. P. once daily by mouth is often sufficient. Many patients will remain nearly symptom free on less. In the cases of thyroidectomized cardiac patients, in whom the indication is to get the maximum metabolic reduction possible without gross myxedema, rations as low as one-fourth or even one-eighth grain (0.016 or 0.008 Gm.) may serve. Since a sensation of warmth is desirable in winter and undesirable in summer, it may be well to give a somewhat larger ration of thyroid in winter than in summer. In the dog days it is a positive advantage, to be, to a certain extent, myxedematous.

Since the strengths of commercial thyroid preparations differ, one from another, it is desirable that the physician stick to one brand and learn its effective dose. The U. S. Pharmacopeia X requirements are as follows:

> Thyroid is the cleaned, dried, and powdered thyroid gland, previously deprived of connective tissue and fat. . . . Thyroid contains not less than 0.17 and not more than 0.23 per cent of iodine in thyroid combination, and must be free from iodine in inorganic or any other form of combination than that peculiar to the thyroid gland. One part corresponds to approximately 5 parts of fresh gland.

It is worth noting that it is not an extract, though commonly so miscalled. Not all commercial brands conform to this pharmacopeial requirement, which is a pity because it makes for confusion. Armour's, Lederle's and Lilly's do; Parke, Davis's and Burroughs, Wellcome's do not. The latter, of course, is a British preparation. In our experience, the following are all equal in calorigenic effect in myxedema patients: 1½ grains (0.1 Gm.) of U. S. P. (Armour, Lederle or Lilly) thyroid, 1 grain (0.065 Gm.) of Parke, Davis thyroid, 5 grains (0.3 Gm.) of Burroughs, Wellcome thyroid, or 0.3 mg. of pure thyroxine.[13]

It should be borne in mind that as a therapeutic agent pure thyroxine has no advantage over dried thyroid; indeed, by mouth it is inferior, for in the whole gland

9. Means, J. H.: Exophthalmic Goiter and Acute Rheumatic Fever, New England J. Med. **201**: 1056, 1929.

10. Means, J. H., and Lerman, Jacob: A Convenient Technic for Steam Inhalation for Bed Patients, New England J. Med. **206**: 124 (Jan. 21) 1932.

11. Thompson, W. O.; Thompson, Phebe K., and Morris, A. E.: The Course of Exophthalmic Goiter Following Subtotal Thyroidectomy, Western J. Surg. **38**: 763 (Dec.) 1930.

12. Means, J. H., and Lerman, Jacob: Symptomatology of Myxedema: Its Relation to Metabolic Levels, Time Intervals and Rations of Thyroid, Arch. Int. Med. **55**: 1 (Jan.) 1935.

13. Lerman, Jacob, and Salter, W. T.: The Calorigenic Action of Thyroid and Some of Its Active Constituents, Endocrinology **18**: 317 (May-June) 1934.

the hormone is in protein linkage as iodothyroglobulin; it is more soluble, and is absorbed from the gastrointestinal tract in a quantitative manner.[14] Nor have other fancy and more expensive thyroid pharmaceuticals anything to recommend them. Dried thyroid by mouth is practically a perfect substitution therapy. It is the only one that need be employed in the treatment of myxedema.

The effects of giving thyroid in myxedema are prompt and striking. In a few days the patient feels warmer and less sleepy. His speech and muscular movements become faster. His sensorium becomes more alert. There is usually a striking diuresis. As fluid goes out, the bloated appearance disappears. With faster skin growth there is desquamation. Indeed, sometimes these people practically shed their skin. The hair takes on a more normal texture and grows faster. In a fortnight the status may be close to normal. The rapid disappearance of symptoms is in contrast to their slow development.

If excessive dosage is given there may be untoward manifestations. Sometimes these take the form of marked aching and even tenderness in skeletal muscles. Sometimes attacks of angina pectoris are produced. Coronaries that were adequate at the low level of myxedema become inadequate when metabolism is suddenly increased. Acute cardiac collapse, from overdosage, has been reported.[15]

For these reasons the physician will do well to go slowly in inaugurating substitution therapy. Indeed, there is no need to do more than start what is to be the probable permanent ration. As previously stated, this is in the neighborhood of 1 to 2 grains (0.06 to 0.12 Gm.) of U. S. P. thyroid, once daily. If untoward symptoms arise (they seldom will on this dosage), thyroid should be stopped till they disappear, then should be resumed in smaller dosage.

Certain by-products of myxedema need mention. The anemia is often impressive. Usually it is of the so-called secondary variety;[16] occasionally the picture is that of pernicious anemia.[17] When the former is the case, iron in full dosage (that is, iron and ammonium citrate 30 grains, or 2 Gm., three times a day) in addition to thyroid may effect a faster restoration of blood than thyroid alone; and when the latter, liver or a potent liver extract should be given along with thyroid. Anemia is the slowest myxedema symptom to disappear under treatment with thyroid alone.

The heart in myxedema is enlarged and flabby, in fact, myxedematous; but thyroid is all the medication that is required.[18] Digitalis contributes nothing, indeed is not indicated, unless some independent heart disease with congestive failure coexists.

A warning is in order regarding morphine. The tolerance to this drug is greatly lowered.[19] A single quarter grain dose may put the myxedema patient into a deep lethargy, which conceivably could be fatal. The drug should not be used in the untreated patient.

In the cretin, the principles of treatment are similar to those in adult myxedema, except that sufficient thyroid must be given to permit a normal rate of growth. The adult with acquired myxedema has been a normal person and by adequate substitution therapy can be restored to that happy status. The cretin, on the other hand, has been athyrotic since birth and, unless adequate substitution therapy is started in the first year or two of life, an irreparable stunting in mental and bodily growth will occur, which no amount of later treatment can correct. The effect of thyroid in the older cretinous imbecile is often disappointing. Sometimes it seems to make him rather irritable and peevish and little else. Suitable dosage for cretins, of U. S. P. thyroid, is approximately as given in the accompanying table.

Suitable Dosage of Thyroid for Cretins

Age	Amount Daily
2– 4 months	1/10 grain
4– 8 months	2/10 grain
8–12 months	2/10 to 3/10 grain
12–24 months	3/10 to 1/2 grain
2– 4 years	1/2 to 1 grain
4–12 years	1 to 2 grains

Acquired myxedema, supervening in childhood, occupies an intermediate position. Treatment here can give nearly as good results as in the adult, if faithfully adhered to.

3. *Endemic Goiter and Sporadic Colloid Goiter.*—In endemic goiter the important thing is prevention, not treatment. This is discussed in the paper by Marine.

Treatment of the endemic goiter or the sporadic colloid goiter is indicated when it produces pressure or becomes the seat of pathologic changes, or for cosmetic reasons. Iodine accomplishes but little after goiter has developed. Thyroid should be given if the metabolism is low. For the most part, the treatment is surgical removal or nothing.

4. *Nodular Goiter.*—This term is purely one of convenience. Any goiter with lumps in it can be called nodular. Only the pathologist can say with certainty what the lumps may be. Such goiters, however, constitute a fairly definite clinical grouping. Treatment is indicated for pressure, which is frequent, or for thyrotoxicosis, or for the possibility or prevention of a malignant condition or for cosmetic reasons. There is no medical treatment for nodular goiter. If the symptoms of pressure are present, operative removal should always be advised. If a state of thyrotoxicosis supervenes, the treatment is that of toxic goiter, which has already been described. Some authorities advise removal of all nodular goiters, on the ground of cancer prophylaxis. There is no question that malignant disease develops more frequently in nodular goiter than in the normal thyroid. To this extent nodular goiter may be looked on as a premalignant lesion. If one takes a somewhat more conservative attitude toward treatment, one must still advise surgical resection if growth or change in consistency of the goiter develops. Anything short of that would be negligent. The long standing, unchanging, asymptomatic, nodular goiter offers the chief opportunity for argument.

5. *Malignant Goiter.*—An inoperable thyroid cancer is a horrible lesion. It is one's duty to prevent such a development at all possible cost. Early detection and eradication in an operable stage is the obvious course.

All degrees of malignancy are encountered from very slowly progressing forms to truly fulminating types.[20]

14. Salter, W. T.; Lerman, Jacob, and Means, J. H.: The Calorigenic Action of Thyroxin Polypeptide, J. Clin. Investigation **12**: 327 (March) 1933.

15. Sturgis, C. C., and Whiting, W. B.: The Treatment and Prognosis in Myxedema, J. A. M. A. **85**: 2013 (Dec. 26) 1925.

16. Lerman, Jacob, and Means, J. H.: Treatment of the Anemia of Myxedema, Endocrinology **16**: 533 (Sept.-Oct.) 1932.

17. Means, J. H.; Lerman, Jacob, and Castle, W. B.: Coexistence of Myxedema and Pernicious Anemia, Tr. A. Am. Physicians **45**: 363, 1930.

18. Lerman, Jacob; Clarke, R. J., and Means, J. H.: The Heart in Myxedema, Ann. Int. Med. **6**: 1251 (April) 1933; Further Observations on the Heart in Myxedema, ibid. **8**: 82 (July) 1934.

19. Lund, C. C., and Benedict, E. B.: Influence of Thyroid Gland on Action of Morphine, New England J. Med. **201**: 345 (Aug. 22) 1929.

20. Clute, H. M.: Clinical Aspects of Thyroid Malignancy, New England J. Med. **205**: 1083 (Dec. 3) 1931.

The latter are practically never cured. The former often are. So long as the disease remains within the gland capsule, there is hope of successful ablation. Even when there is slight extension beyond the capsule there is still some possibility of complete removal by sacrificing the overlying muscles and other nonessential adnexa.

Surgical treatment for malignant goiter should be followed by irradiation, and inoperable growths may be treated by this method alone. Thyroid malignancy often responds well to irradiation, particularly when it is lymphosarcomatous instead of carcinomatous. Primary tumors respond better than metastases. Irradiation should not replace surgery even when only partial resection is possible. Papillary adenocarcinoma is especially amenable to treatment in these ways.

6. *Inflammation of the Thyroid.*—Acute thyroiditis turns up now and then, either in persons with goiter or in those with normal thyroids. The indications for treatment are those of any infection: rest in bed, and so forth, together with an ice collar locally. Under this regimen most cases subside rapidly and clear up completely. Occasionally the process goes to suppuration and then there is danger of suffocation from pressure or inward pointing with rupture into the trachea or mediastinum. If suppuration is suspected, an exploratory puncture may find the pus, and then anterior drainage should be done.

Chronic thyroiditis appears in several forms, of importance chiefly because they may be productive of pressure or of myxedema. The former may be relieved by operation, the latter by giving thyroid. Such glands may be intensely hard and may closely resemble a malignant growth.

7. *Anomalies of the Thyroid.*—Aberrant thyroid tissue may be found at the back of the tongue, along the course of the thyroglossal duct, in the neck lateral to the usual thyroid, or in the mediastinum. In any of these positions, surgical removal may be indicated if any mischief is being done or is impending; i. e., pressure, malignancy or hyperfunction. Lateral aberrant thyroids are particularly likely to become the seat of papillary cyst adenoma and should always be removed for prophylaxis.

The thyroglossal duct may persist and give rise to a thyroglossal cyst. These may become infected and rupture spontaneously or require drainage. When this happens, a sinus is found that can be eradicated only by complete dissection of the cyst.

THE USE OF THE THYROID HORMONE AS A DRUG

In contrast to its use in myxedema, in which it is a direct substitute for a hormone that the body needs and cannot make for itself, thyroid may be tried in a variety of nonthyroid disorders for the sake of its drug action. The action wanted may be the calorigenic, the diuretic, the diaphoretic, the effect on other endocrines such as the female gonads, the direct effect on heart muscle, the stimulation of the vegetative nervous system with, for example, increased peristalsis and relief of constipation, or any other that it possesses.

The physician, in using the drug, should think of all its actions and give it when he would like to obtain, in his patients, such effects as it may conceivably produce. He should also remember that dried thyroid, U. S. P., is the form of choice, not pure thyroxine or any special pharmaceutical.

1. *Hypometabolism Without Myxedema.*—A considerable number of persons turn up with basal metabolic rates well below standard who show no clinical evidence of thyroid disease and in all probability have no thyroid disease. The low metabolic rate is brought about in some other fashion than through lack of thyroxine. Some of these are, as far as can be discovered, perfectly healthy persons. When symptoms occur under such circumstances, they are of varied sorts. Sometimes the picture is that of mental depression, sometimes malnutrition. Or the picture may be that of arthritis; it may be Ménière's disease; it may be recurring corneal ulcer; it may be vasomotor rhinitis or some other anaphylactic manifestation; it may be constipation, or it may be any sort of neurasthenia. Given any of these pictures in association with a low metabolic rate, the empirical use of thyroid is justified. If it confers any benefit (it may or it may not), the physician and patient may both be thankful. If it does not, it should be discontinued. The reaction of the true hypothyroid individual is definite, precise and predictable; that of these nonmyxedematous patients with low metabolic rate indefinite, variable and unpredictable. One is biologic substitution therapy, the other drug therapy. Even for its drug action, it is seldom wise to give more than 3 grains (0.2 Gm.) of U. S. P. thyroid daily, for any great length of time.

2. *Obesity.*—Thyroid, of course, has been used for reduction purposes for years. It will reduce, but it is by producing hyperthyroidism that it does so. Symptoms of tachycardia, perhaps precordial pain, nervousness, irritability, warmth and sweating are apt to result. I have always been rather opposed to its use for such a purpose, except in the face of very special indications. However, I am bound to confess that I believe it less risky to use thyroid and produce a mild hyperthyroidism that will subside when the drug is stopped than to employ alpha-dinitrophenol or (4:6) dinitroorthocresol, now so much in vogue, of which the possible toxic effects, by no means fully known, are serious.[21]

3. *Pregnancy and Sterility.*—Pregnant women with nontoxic goiters and slightly low metabolic rates had best be given thyroid during pregnancy. Certain sterile or habitually aborting women may become fertile and go through normal pregnancies if placed on thyroid.

4. *Skin Diseases.*—Certain skin lesions characterized by dryness, particularly senile eczemas, ichthyosis and scleroderma, sometimes are improved by thyroid. The benefit here probably depends on the increased moisture of the skin induced by thyroid and perhaps by acceleration of skin growth.

5. *Heart Block.*—Thyroid has been advocated as a preventive of Stokes-Adams attacks. According to Dr. P. D. White, its action in such cases depends on direct excitation of the ventricles.

6. *Nephrosis.*—Epstein[22] originally advocated thyroid in the type of nephropathy described by him. Its effect was largely diuretic. I have tried it in such cases but without brilliant results.

Other conditions in which thyroid might be helpful, by virtue of some one or more of its many actions, may present themselves, but those mentioned, in my experience, are the most important.

Massachusetts General Hospital.

21. Dinitrophenol Not Acceptable for N. N. R., Report of Council on Pharmacy and Chemistry, this issue, p. 31.

22. Epstein, A. A.: Thyroid Therapy and Thyroid Tolerance in Chronic Nephrosis, J. A. M. A. 87:913 (Sept. 18) 1926.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—*In their elaboration, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft for publication. The articles will be continued from time to time in these columns. When completed, the series will be published in book form.*—ED.

THERAPY OF PUERPERAL SEPSIS

OUTLINE BY DR. A. F. LASH

In this infection of the uterus and its surrounding structures occurring after the termination of a pregnancy, the available resources of prevention are a great deal better than the means of cure.

PROPHYLAXIS

Antepartum Care.—All foci of infection in the tonsils, sinuses, cervix and external genitalia should be eliminated. By means of proper diet and good personal hygiene, one should aim to bring the expectant mother to the onset of labor in a fine physical condition with maximum resistance against the unavoidable infection; for, no matter what precautions are taken—what antiseptics are used—the vagina of every woman in labor contains micro-organisms that will have invaded the puerperal uterine cavity by the third day.

Obstetric Care.—The problem is twofold: to exclude all organisms that might be pathogenic to the individual and to avoid all conditions that lower resistance.

Elimination of Exogenous Infection: 1. Hemolytic streptococcus carriers must be resolutely excluded from contact with women during labor and the puerperium, for the carrier is a great menace. This includes avoidance of general visiting. This means that cultures must be taken as a routine from the noses and throats of the entire obstetric personnel: nurses, physicians and students. Individuals having positive cultures must be barred until, by appropriate treatment, two successive negative cultures have been secured. A physician, nurse or student having recently attended a case of contagious disease should not be permitted to come near an obstetric patient. Patients who are streptococcus carriers in their genital tract, even though they are free from symptoms, should be isolated from other puerperas quite as carefully as those who are actually suffering from puerperal infection; and the personnel caring for such patients should not be permitted to take care of "clean" cases.

2. Four thicknesses of gauze should cover the nose and mouth of every person who comes in contact with a woman during labor or the puerperium. This means that the mask must be worn not only during the delivery but by any one, nurse or physician, who removes the perineal dressings in the wards.

3. Vaginal examinations should be as few as possible and should be made with precautions of asepsis not only as to the wearing of mask and gloves and the sponging of the area surrounding the vaginal orifice with antiseptic solution (2 per cent dilution of Compound Solution of Cresol) but also with full exposure of the vulva, complete separation of the labia, and direct introduction of the sterile examining finger without contact with the external parts.

4. Surgical asepsis must be observed during parturition. The details are too intricate to permit exposition here, and too well known to require it.

Prevention of the Lowering of Resistance.—This is brought about by averting exhaustion during labor, avoiding all unnecessary trauma, and preventing excessive loss of blood.

1. Averting exhaustion includes consideration being given to diet, rest and sleep, the care of the bladder and bowels, and the prevention of excessively prolonged labor.

The diet should be high in carbohydrate and easily digestible, semisolid food being employed for the first day or two of the puerperium, after which the patient is placed on a full ward diet.

Rest and sleep are favored by the employment of obstetric analgesia. (*a*) Morphine sulphate (from 10 to 15 mg.) hypodermically may be used to give the patient a resting period of from two to four hours in a prolonged labor, and this injection may even be repeated once if a second rest period should be considered necessary, provided it is not employed within two or three hours of the termination of the labor to avoid the birth of a narcotized infant. Hence it should ordinarily not be given after the cervix is two thirds dilated in a primipara or one third dilated in a multipara. (*b*) Chloral hydrate (from 1.3 to 2 Gm.) may be given in starch water (120 cc.) by rectum as a synergist to the morphine, especially because it favors relaxation and dilatation of the cervix. (*c*) Inhalation anesthesia is preferred for the termination of the second stage. While ethylene and oxygen might be the method of choice, its expensiveness and the danger of explosion render the use of nitrous oxide and oxygen desirable, supplemented, if necessary, by small amounts of ether for terminal anesthesia. Prolonged and deep anesthesia should not be employed, for it delays labor, inviting operative intervention; and it favors postpartum hemorrhage, which lessens resistance.

Care of the Bladder: The patient should be encouraged to urinate at least every two hours during labor. If she is unable to do so and distention of the bladder makes its appearance suprapubically, aseptic catheterization is required, by means of a soft rubber male catheter of about No. 10 size (English). If there is difficulty in getting the catheter into the bladder, the presenting part may possibly be pushed back by means of two fingers along the urethra. A distended bladder may cause "uterine inertia," and its evacuation will allow labor to proceed. During the puerperium there is a considerable tendency to overdistention of the bladder, which must be prevented by aseptic catheterization every eight hours until the patient is able to urinate voluntarily.

Care of the Bowels: The rectum should be emptied by means of a soap suds (1 liter) enema as soon as labor actually sets in. In the second stage, and in multiparas even late in the first stage, enemas and cathartics are contraindicated. During the recovery from labor, cathartics should not be employed as a routine but only when definitely indicated and not earlier than on the third day after labor. Laxative food, which may be

started quite early after delivery, and Liquid Petrolatum or its Emulsion may suffice. If not, an enema may be resorted to. Saline laxatives and evacuants that produce liquid diarrheal stools should be avoided at all times.

2. Avoidance of unnecessary trauma requires the application of a high degree of obstetric judgment and skill. Patience and gentleness will go far toward preventing lacerations and bruises. Operative procedures should be reduced to a minimum and be carried out only under proper conditions. While low forceps delivery expertly done when indicated does not increase the incidence of infection, high forceps and mid forceps deliveries do. Hence these procedures should not be resorted to unless absolutely demanded; but when indicated they should not be postponed, as the earlier they are performed, when needed, the better. These are major surgical procedures that require a completely aseptic technic and the hands of an expert.

3. Prevention of excessive hemorrhage demands the correct treatment of premature separation of the placenta, of placenta praevia (q. v.) and of postpartum hemorrhage (q. v.). Intrapartum hemorrhage is due chiefly to unskilled obstetric intervention: forcible dilation of the cervix producing lacerations, awkward application of forceps inflicting gashes, or the use of solution of pituitary during the second or even the first stage of labor producing cervical and perineal lacerations and even rupture of the uterus. Vaginal hysterotomy or episiotomy, if not skilfully done, may be followed by serious hemorrhage.

TREATMENT

Patients suffering from puerperal sepsis (temperature above 100.5 F. on two successive four hour readings) should at once be transferred to the special service and isolated there. A careful general physical examination and a blood culture should be made, the lochia examined, and a culture taken from the vaginal discharge just within the introitus. It is only if the vaginal culture is indeterminate that a culture may be taken from the cervix, with the exercise of the utmost gentleness.

1. Rest must be general as well as local. The patient must not be permitted to get up or even to sit up. She should be free from the annoyances of vsitors. She should be kept in Fowler's posture. Sleep may be induced by bromide or phenobarbital (see Insomnia), reinforced by analgesics if there is pain (see Therapy of Pain).

Local rest to the pelvic structures is procured by the uncovered icebag applied to the suprapubic region and by absolute avoidance of internal vaginal or uterine douches and of enemas. Powerful cathartics are tabu. Liquid petrolatum is admissible. No pelvic examinations should be made and the uterus should not be manipulated from the abdomen, as any of these disturbances may favor extension of the infection. If the lochia are profuse and foul, the patient should be placed in the high Fowler position. Ergot and solution of pituitary are given only if bleeding occurs. Otherwise they are contraindicated, as they disturb the rest of the uterus. If the infection remains localized within the uterus (endometritis), most of the patients return to normal within a few days.

When abdominal distention and tenderness set in, the icebag is replaced by large hot stupes over the abdomen. These must not be so heavy as to make the patient uncomfortable. A rectal tube may help in allowing gas to escape from the bowel.

The appearance of the symptoms of ileus call for the management of that condition (q. v.). Gastric lavage or the Levine tube are used for vomiting.

2. Therapy of fever (q. v.) is instituted. This consists most eminently of good nursing. Bedclothes must be changed as often as necessary because of excessive perspiration.

When the patient is seriously sick her fluid balance should be maintained by forcing liquids, particularly fruit juices by mouth; and only if this channel becomes unavailable because of the demands of absolute peritoneal rest should parenteral administration of fluid be resorted to; e. g., phleboclysis of 2.5 per cent dextrose in half strength (0.425 per cent) Physiologic Solution of Sodium Chloride. One should aim to maintain an elimination of 1,000 cc. of urine in the twenty-four hours.

The importance of maintaining the stock of sodium chloride in the patient's system must not be overlooked. When this becomes low, as indicated by absence of chloride in the urine or its presence in very small amounts (0.3 per cent or less), the administration of salt in the form of broths and of Ringer's solution by mouth or of Physiologic Solution of Sodium Chloride by hypodermoclysis is demanded, or, if the deficiency is great, by intravenous injection of hypertonic salt solution.

If acidosis is present or threatened (if the urine is persistently acid to methyl red or if acetone or diacetic acid appears in the urine), carbohydrate administration is demanded, by mouth if possible, or by phleboclysis of 10 per cent dextrose if necessary. Alkali should, if possible, be given by mouth in sufficient amounts to render the urine alkaline (at least to methyl red); and, if this method of administration is impossible, 5 per cent sodium bicarbonate solution or Lactate-Ringer's (Hartman's) solution should be injected intravenously until this change occurs. The alkali administration must be discontinued if the urine turns thymolphthalein blue. If sugar appears in the urine when dextrose phleboclysis is demanded, the simultaneous administration of insulin (see Diabetes Mellitus) is indicated.

3. Immunization is produced. (*a*) Blood transfusion is very valuable not only if anemia is present but also as a stimulant to the immunity reactions. Usually from 300 to 350 cc. of whole blood is given every three or four days. It is especially indicated in anaerobic streptococcic infection, which is the most common cause of thrombophlebitis.

(*b*) Specific antiserum should be resorted to at the earliest possible moment, as soon as the bacteriologic diagnosis can be made. This may demand diphtheria antiserum (see Therapy of Diphtheria) or Welch bacillus antiserum (see Therapy of Gas Bacillus Infection). Most commonly it is hemolytic streptococcus infection that in its early stages demands 40 cc. of the streptococcus antiserum being given intravenously or intramuscularly, to be repeated daily for the next two days. Usually 100 or 120 cc. of the serum has proved sufficient. The antiserums are of no value in the late stages of any of these infections.

(*c*) Vaccines may be of value in the subacute and chronic stages of streptococcic infection. But they probably have no advantage over nonspecific protein therapy in its various forms. For this stage of infec-

tion, heat is of great value, such as that derived from hot douches or the therapeutic lamp. Diathermy may be used in the quiescent period of an infection, although the ultra-short wave current may be used earlier.

The intravenous use of various dyes has not been found of definite value. The colloidal metals are not commonly used because of their cost and their probable lack of value.

(*d*) Arsphenamine is indicated in rather small therapeutic dosage in the nonspecific spirochetal mixed infections. It has been claimed by some that it is a stimulant to leukocyte production.

4. Surgery has a narrow field of usefulness in the treatment of puerperal sepsis. A posterior colpotomy is indicated for pelvic abscess. Hysterectomy is occasionally indicated for abscess of the uterus wall. Drainage through the abdominal wall as well as through the vagina may be of great aid in an ascending peritonitis. The ligation of veins in thrombophlebitic processes has not been successful, the usual conservative measures having been found more effective. In the presence of puerperal sepsis, curettement is dangerous.

DISCUSSION OF PREVIOUSLY PUBLISHED ARTICLES

THERAPY OF ARTERIAL THROMBOSIS OF THE EXTREMITIES

To the Editor:—In THE JOURNAL, April 6, page 1229, there was an excellent discussion of the therapy of arterial thrombosis of the extremities by Dr. G. W. Scupham. One inaccuracy in the text is, I believe, of sufficient importance to be corrected. The author describes Goldflam's test for arterial circulation as consisting of "observing the color of the foot while the recumbent patient raises the extended leg rapidly." The original publication by Goldflam (*Neurol. Zentralbl.* **29:** 2, 1910) describes the test as a flexion and extension of the feet while they are maintained in the horizontal position. The test that I described in THE JOURNAL, May 11, 1929, page 1571, which has proved reliable in the opinion of many observers, consists of an observation of the plantar surfaces of the feet while the patient flexes and extends both feet with the legs maintained in the vertical position.

Plantar ischemia as elicited by my test has been found to be of considerable importance in the diagnosis of arterial obstruction in the extremities.

SAUL S. SAMUELS, M.D., New York.

[A copy of this communication was submitted to Dr. Scupham, who replies:]

To the Editor: In regard to the criticism by Dr. Saul S. Samuels of the article on the therapy of arterial thrombosis of the extremities, I wish to say that he is quite correct. It is regrettable that this escaped correction when the paper was submitted to me for approval.

Furthermore, periarterial sympathectomy should not have been included in the discussion. When it was mentioned in my lecture on which this paper was based, it was only to mention that it was anatomically incorrect.

GEORGE W. SCUPHAM, M.D., Chicago.

THERAPY OF VARICOSE VEINS AND ULCERS

To the Editor:—The article on the therapy of varicose veins and ulcers from the Cook County Hospital, appearing in the February 16 issue of THE JOURNAL, is so comprehensive and clear that it seems in order to note a few points which are not in accord with current thought.

On page 560 the article reads "No one, of course, would undertake injection treatment of veins in the presence of fresh phlebitis." Tavel in 1907 advised injection in the presence of phlebitis to help in its healing (*Berl. klin. Wchnschr.* **44:** 181, 1907). I have injected above areas of acute phlebitis in many ambulant patients and have always noted quicker disappearance of the local inflammation.

The warnings on systemic contraindications to the sclerosing injections is in my opinion too formidable. I have recently reviewed one thousand consecutive cases of varicose veins treated at the Boston City Hospital. Out of this group there were 375 patients with serious systemic disease, including diseases of the heart, lungs and kidneys. There were no mishaps attributable to the injections. As for focal infection, very few patients indeed would be treated if those with septic teeth or tonsils should be eliminated (The Treatment of Varicose Veins: Is Systemic Disease a Contraindication? THE JOURNAL, June 8, p. 2077).

On page 561 is the statement that the ligations should be carried out "at the junction of the upper and middle thirds of the thigh." I have recently considered this point in detail and have come to the conclusion, as have others before me, that the site of election is at the saphenofemoral junction. To operate below this point is to invite almost certain recurrence (*Surg., Gynec. & Obst.* **59:**916 [Dec.] 1934).

EDWARD ALLEN EDWARDS, M.D., Brookline, Mass.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH, Secretary.

DINITROPHENOL NOT ACCEPTABLE FOR N. N. R.

The actions of various nitro derivatives of phenol and naphthol as accelerators of metabolism have been studied for the past fifty years. Cazeneuve and Lepine[1] in 1885 described the increase in the metabolism of dogs given dinitronaphthol. They showed that the administration of large doses was followed by vomiting, fever, hyperpnea and death. Rigor mortis set in almost immediately. A few years later, Gibbs and Reichert[2] reported similar observations with the use of dinitrophenol. During the war many cases of dinitrophenol poisoning occurred among French munition workers. The poisoning, which was often severe and sometimes fatal, was of such common occurrence that a special pharmacologic investigation was undertaken. The results of these studies have been reported by Magne, Mayer and Plantefol.[3]

These workers showed that 1, 2, 4 dinitrophenol increased the oxidation in the tissues of various species of animals and man. They found that the site of the action of the drug was peripheral and that the oxygen consumption of the animal could be increased to twelve times its normal value. These changes were accompanied by hyperpnea and fever. For various species of animals the fatal dose was about 50 mg. per kilogram of body weight, regardless of the mode of administration.

The administration of the drug was followed by a rapid disappearance of glycogen from the liver and muscles, and the development of hyperglycemia. The nitrogen excretion was unaffected. In fatal cases, rigor mortis developed early. Degenerative changes in the liver and kidneys were found. Heymans and Bouckaert[4] showed that the actions of 2, 4 dinitronaphthol are similar to those of dinitrophenol. In 1933, Tainter

1. Cazeneuve, P., and Lepine, R.: Sur les effets produits par l'ingestion et l'infusion intraveneuse de trois colorants jaunes, dérivés de la houille, Comp. rend. Acad. d. sc. **101:** 1167, 1885.

2. Gibbs, W., and Reichert, E. T.: Am. Chem. J. **13:** 289, 1891.

3. Magne, Henri; Mayer, André; Plantefol, Lucien; Guerbet, Maurice; Georgesen, J., and Vles, Fred: Etudes sur l'action du dinitrophénol 1-2-4 (Thermol), Ann. de physiol. et de physiochem. biol. **7:** 269, 1931; **8:** 1, 1932.

4. Heymans, C., and Bouckaert, J.-J.: Hyperthermic and Cardiovascular Actions of Dinitro-α-naphthol in the Dog, Arch. internat. de pharmacodyn. et de thérap. **35:** 63, 1928. Heymans, C.: The Influence of Some New Nitroderivatives on the Cellular Metabolism and on the Body Temperature, J. Pharmacol. & Exper. Therap. **51:** 144 (June) 1934.

and Cutting and their co-workers[5] confirmed much of the work previously reported by the French and Belgian workers. They found, in agreement with previous investigators, that dinitrophenol can increase the oxygen consumption of animals to more than ten times the basal values. The rise in body temperature was found to be secondary to the acceleration in metabolism and was not prevented by the destruction of the brain or spinal cord, or by complete curarization. They concluded, as had Magne, Mayer and Plantefol, that the mechanism of action of dinitrophenol was peripheral. Accompanying the decrease in the liver and muscle glycogen, the concentrations of sugar and lactates in the blood and lactates in the muscle increased. The total carbohydrate disappearing accounted for less than half of the oxygen consumption. This finding, together with a decrease in the respiratory quotient, indicated that fat in addition to carbohydrate was oxidized. The increased amounts of oxygen consumed were carried to the tissues by means of an increased minute volume of circulatory blood and of a greater arteriovenous oxygen difference. Little or no change in the blood pressure and pulse rate was observed. Neither anoxemia nor acidosis was found to develop as long as the respiratory and circulatory mechanisms kept pace with the oxygen consumption. Animals were found to develop no tolerance to the drug. The fatal dose for various species of animals, regardless of the mode of administration, was about 20 to 30 mg. per kilogram of body weight.

Death in experimental animals resulted from (1) direct circulatory depression, (2) hyperpyrexia, and (3) acidosis and anoxemia. No effective antidote was found. Tainter and Cutting were unable to find any significant pathologic alteration in liver or kidneys. Rigor mortis set in at once in fatal cases in animals. The actions of the drug in men resembled closely those in animals when equivalent doses were used.

Single doses of from 3 to 5 mg. per kilogram of body weight increased the metabolic rate from 20 to 30 per cent in the first hour. After about twenty-four hours the metabolism gradually fell, reaching the previous normal level on the third day. No untoward effects were observed in eight patients, even after the two months of daily administration. Single doses of between 5 and 10 mg. per kilogram caused no changes in temperature, pulse or respiration, but the patients perspired copiously. In doses of 10 mg. per kilogram, dinitrophenol increased the temperature 3 degrees C. or more; the respirations were increased markedly. The authors considered the latter doses too dangerous for routine use.

Nine patients given from 3 to 5 mg. of the drug per kilogram daily for prolonged periods lost weight without resort to dietary restrictions.[6] No undesirable symptoms were observed. The authors concluded that dinitrophenol "may be useful in the treatment of obesity, hypothyroidism and similar depressed metabolic states." Because of the possible dangers from the use of the drug in patients, they suggested that the drug be used only under strictly controlled conditions. Accompanying this report of Cutting, Mehrtens and Tainter in THE JOURNAL, warning was issued both in a report of the Council on Pharmacy and Chemistry[7] and in editorial comment[8] against the uncontrolled administration of the drug. Despite these warnings, dinitrophenol has been used extensively in the treatment of obesity and not always with the necessary precautions. During the past year the Stanford Clinic supplied physicians and patients, on physicians' prescriptions, more than 1,200,000 capsules of the drug of 0.1 Gm. each. It is estimated that 4,500 patients in California alone were treated in one year and that probably 100,000 persons have used the drug in this country since its introduction for the treatment of obesity.[9] About twenty commercial concerns are furnishing dinitrophenol or mixtures in which this drug is the active principle.[9] Some smaller concerns have sent samples of the drug unsolicited to physicians and in the accompanying literature have minimized the dangers of its use.

It is not surprising, therefore, that undesirable and even serious toxic manifestations of the drug have been reported.[9a] The most common of these is a maculopapular erythematous eruption of the skin reported in 7 per cent of 113 cases treated by Tainter, Stockton and Cutting.[10] Skin disorders were common in the French munition workers poisoned with the drug during the war. Similar toxic manifestations have been reported by Anderson, Reed and Emerson,[11] Haft,[12] Dintenfass,[13] Sidel,[14] Frumess,[15] Hirsch[16] and Jackson and Duvall.[17] Matzger[18] found skin tests to be of no value in predicting skin sensitivity to dinitrophenol. The development of chronic ear infection resulting largely from vascular congestion produced by the drug has been reported.[13] Itching, swelling of the mucous membranes and disturbances in smell and taste functions were noted by Haft and by Jackson and Duvall.

Haft and Sidel both observed evidence of liver damage following "therapeutic" doses of dinitrophenol.

Bohn,[19] Silver[20] and Hoffman, Butt and Hickey[21] have reported cases in which agranulocytic angina developed following the ingestion of the drug.

Up to the present time six deaths following the administration of dinitrophenol have been reported.[22] In two of these especially large doses were taken, but in two others the amounts administered did not exceed the dose of 5 mg. per kilogram recommended by Tainter and his co-workers. In a third case the dose of the drug was 10.7 mg. per kilogram, an amount not before considered to be fatal. In most of the patients, death occurred within twenty-four hours of the onset of toxic symptoms such as dizziness, dyspnea, fatigue, pyrexia and excessive perspiration. Rigor mortis set in promptly after death. In the

5. Cutting, W. C.; Mehrtens, H. G., and Tainter, M. L.: Actions and Uses of Dinitrophenol: Promising Metabolic Applications, J. A. M. A. **101:** 193 (July 15) 1933. Cutting, W. C., and Tainter, M. L.: Actions of Dinitrophenol, Proc. Soc. Exper. Biol. & Med. **29:** 1268 (June) 1932. Tainter, M. L., and Cutting, W. C.: Febrile, Respiratory and Some Other Actions of Dinitrophenol, J. Pharmacol. & Exper. Therap. **48:** 410 (Aug.) 1933. Tainter, M. L.: Low Oxygen Tensions and Temperature on Actions and Toxicity of Dinitrophenol, ibid. **51:** 45 (May) 1934. Schulte, T. L., and Tainter, M. L.: Chronic Toxicity of Dinitrophenol: Renal Function, Proc. Soc. Exper. Biol. & Med. **31:** 1163 (June) 1934. Hall, V. E.; Field, J.; Sahyun, M.; Cutting, W. C., and Tainter, M. L.: Carbohydrate Metabolism, Respiration and Circulation in Animals with Basal Metabolism Heightened by Dinitrophenol, Am. J. Physiol. **106:** 432 (Nov.) 1933. Tainter, M. L., and Cutting, W. C.: Miscellaneous Actions of Dinitrophenol: Repeated Administrations, Antidotes, Fatal Doses, Antiseptic Tests and Actions of Some Isomers, J. Pharmacol. & Exper. Therap. **49:** 187 (Oct.) 1933. Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: Use of Dinitrophenol in Obesity and Related Conditions: A Progress Report, J. A. M. A. **101:** 1472 (Nov. 4) 1933.

6. Cutting, Mehrtens and Tainter.[5]

7. Alpha-Dinitrophenol, Preliminary Report of the Council on Pharmacy and Chemistry, J. A. M. A. **101:** 210 (July 15) 1933.

8. Dinitrophenol, a Metabolic Stimulant, editorial, J. A. M. A. **101:** 213 (July 15) 1933.

9. Tainter, M. L.; Cutting, W. C., and Stockton, A. B.: Use of Dinitrophenol in Nutritional Disorders, Am. J. Pub. Health **24:** 1045 (Oct.) 1934.

9a. As this report goes to press, a telegraphic communication has been received from Dr. W. W. Boardman reporting that twelve cases of cataract have recently been noted in California, occurring in patients who had been taking dinitrophenol.

10. Cutting, W. C., and Tainter, M. L.: Metabolic Actions of Dinitrophonol with the Use of Balanced and Unbalanced Diets, J. A. M. A. **101:** 2099 (Dec. 30) 1933.

11. Anderson, H. H.; Reed, A. C., and Emerson, G. A.: Toxicity of Alpha-Dinitrophenol: Report of Case, J. A. M. A. **101:** 1053 (Sept. 30) 1933.

12. Haft, H. H.: Toxicity of Dinitrophenol, J. A. M. A. **101:** 1171 (Oct. 7) 1933.

13. Dintenfass, Henry: An Ear Complication from Dinitrophenol Medication, J. A. M. A. **102:** 838 (March 17) 1934.

14. Sidel, Nathan: Dinitrophenol Poisoning Causing Jaundice: Report of Case, J. A. M. A. **103:** 254 (July 28) 1934.

15. Frumess, G. M.: Allergic Reaction to Dinitrophenol: Report of Case, J. A. M. A. **102:** 1219 (April 14) 1934.

16. Hirsch, Sidney: Report of a Toxic Manifestation Due to "Dinitrenal," J. A. M. A. **102:** 950 (March 24) 1934.

17. Jackson, Henry, and Duvall, A. I.: Dinitrophenol Poisoning: Report of a Case, J. A. M. A. **102:** 1844 (June 2) 1934.

18. Matzger, Edward: Can Sensitivity to Dinitrophenol Be Determined by Skin Tests? J. A. M. A. **103:** 253 (July 28) 1934.

19. Bohn, S. S.: Agranulocytic Angina Following Ingestion of Dinitrophenol, J. A. M. A. **103:** 249 (July 28) 1934.

20. Silver, Solomon: A New Danger in Dinitrophenol Therapy: Agranulocytosis with Fatal Outcome, J. A. M. A. **103:** 1058 (Oct. 6) 1934.

21. Hoffman, A. M.; Butt, E. M., and Hickey, N. G.: Neutropenia Following Amidopyrine: Preliminary Report, J. A. M. A. **102:** 1213 (April 14) 1934.

22. Silver.[20] Tainter, M. L., and Wood, D. A.: A Case of Fatal Dinitrophenol Poisoning, J. A. M. A. **102:** 1147 (April 7) 1934. Geiger, J. C.: A Death from Alpha-Dinitrophenol Poisoning, ibid. **101:** 1333 (Oct. 21) 1933. Poole, F. E., and Haining, R. B.: Sudden Death from Dinitrophenol Poisoning: Report of a Case with Autopsy, ibid. **102:** 1141 (April 7) 1934. Masserman, J. H., and Goldsmith, Harry: Dinitrophenol: Its Therapeutic and Toxic Actions in Certain Types of Psychobiologic Underactivity, ibid. **102:** 523 (Feb. 17) 1934. Medicine and the Law: Death After Slimming Treatment, Lancet **1:** 489 (March 3) 1934.

case of Poole and Haining,[22] examined after death, degenerative changes in the liver and kidneys were found. There was segmentation and pigmentation of the cardiac muscle; the small blood vessels of the mucosa of the stomach were markedly distended and in places there were small hemorrhages. Essentially similar changes were reported by Tainter and Wood.[22] De Chatel and Motike[23] recently have offered evidence of cardiac damage induced by administration of dinitrophenol in animals.

It has been indicated repeatedly in editorial comments in THE JOURNAL[24] that the sale of dinitrophenol should be restricted to physicians' prescriptions and that the widespread use of the drug in the treatment of obesity should await further study in laboratories and clinics. The use of the drug should be limited to carefully selected cases. Patients with diabetes, nephritis and diseases of the liver and heart should not be given the drug. To treat a mild chronic condition such as obesity with a toxic agent capable of inducing serious injury and death appears to be unjustified. Silver[20] in twenty-four carefully studied cases was unable to induce any loss in weight without restricting the diet of the patients. It would appear, therefore, that if the loss in weight is employed as an index of the amounts of dinitrophenol required (as indeed it will be unless the administration is rigorously supervised by physicians aware of the dangers) many further cases of toxicity will occur. Strang and Evans[25] have found dinitrophenol of questionable practical value in weight reduction. In Germany an official warning regarding the danger of dinitrophenol has been issued.[26] According to a report in the *Canadian Medical Association Journal*,[27] obesity has been included in the list of conditions for which remedies cannot be sold in Canada. Dinitrophenol, therefore, would be barred from sale by the Food and Drugs Act of Canada. It has been suggested, further, that dinitrophenol be put on the Poison List in England, thus prohibiting the sale of the drug except on medical prescriptions.[28] It is suggested that similar restrictions be placed on the sale of dinitrophenol and reducing mixtures containing dinitrophenol in this country and that the use of the drug be restricted to selected patients under the observation of properly trained physicians. The use of dinitrophenol by all others should await further careful experimentation in the laboratory.

The Council voted that dinitrophenol and brands of dinitrophenol be not accepted for inclusion in New and Nonofficial Remedies and authorized the publication of the foregoing report, which explains the Council's position in this matter.

SODIUM ARSPHENAMINE AND SODIUM DIARSENOL OMITTED FROM N. N. R.

The acceptance of Sodium Diarsenol (Diarsenol Co., Inc.), a brand of sodium arsphenamine, expires with the close of 1935. When the matter came before the Council for reconsideration, the referee expressed doubt that it was in the interest of medicine to retain the preparation in New and Nonofficial Remedies any longer.

Sodium arsphenamine was devised a number of years ago because of reactions due to the difficulty of proper alkalinization of arsphenamine. At that time it was thought that this preparation dissolved in distilled water corresponds to the alkaline solution of arsphenamine. The use of sodium arsphenamine has steadily declined. Not only is it not used generally by syphilologists, but it is not mentioned in many of the more recent textbooks.

On the recommendation of the referee, the Council deemed it advisable to send a questionnaire to a number of syphilologists asking their views as to the value of sodium arsphenamine. The letter contained the following questions:

(*a*) Are you using sodium arsphenamine at the present time?
(*b*) Do you consider it to be of value in present-day therapy?
(*c*) Are you of the opinion that the use of this drug is unwarranted or objectionable?

The view expressed in the replies received was practically unanimous that the drug deserves no place in present-day syphilis therapy.

The Council therefore voted to omit sodium arsphenamine and the accepted brand, Sodium Diarsenol, from New and Nonofficial Remedies.

When the foregoing statement of the Council's consideration of Sodium Diarsenol was transmitted to the Diarsenol Company, Incorporated, the firm replied:

"Inasmuch as the sale of Sodium Diarsenol has dropped to a negligible amount we are willing to remove all reference to Sodium Diarsenol from our future advertising matter."

23. de Chatel, A., and Motike, J.: Ueber die Gefahren der therapeutischen Amwendung des Alpha-Dinitrophenol, Deutsch. Arch. f. klin. Med. **176**: 700, 1934.
24. The Toxicity of Dinitrophenol, Current Comment, J. A. M. A. **101**: 1080 (Sept. 30) 1933. Dinitrophenol in Obesity, editorial, ibid. **103**: 1950 (Dec. 22) 1934.
25. Strang, J. M., and Evans, F. A.: An Evaluation of Dinitrophenol as an Aid in Weight Reduction, J. A. M. A. **104**: 1957 (June 1) 1935.
26. Reichs-Gesundh.-Bl. **52**: 1078, 1934.
27. Bar Sale of Dinitrophenol in Canada, Canada News, J. A. M. A. **103**: 1243 (Oct. 20) 1934.
28. Medicine and the Law: Dekrysil Treatment—The Paddington Inquest, Lancet **1**: 652 (March 24) 1934.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

CITY DAIRY COMPANY PASTEURIZED HOMOGENIZED MILK

Distributor.—City Dairy Company, South Bend, Ind.

Description.—Bottled, pasteurized, homogenized milk.

Preparation.—Milk of 3.5 per cent minimum fat content, obtained from tuberculin tested herds under government and company inspection, is tested, pasteurized by the standard holding method (61 C. for thirty minutes), homogenized under 1,500 pounds pressure, cooled and filled in bottles by the usual procedure (THE JOURNAL, Sept. 1, 1934, p. 681).

Analysis (submitted by manufacturer).—

	per cent
Total solids	13.2
Fat	4.2

Calories.—0.7 per gram; 20 per ounce.

Claims of Manufacturer.—The cream does not separate. The curd formed in the stomach is softer than that from unhomogenized milk.

DIADEM PATENT FLOUR

Manufacturer.—Noblesville Milling Company, Noblesville, Ind.

Description.—Patent flour prepared from soft winter wheat; bleached.

Manufacture.—Soft winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, and bleached with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per barrel).

THIN MASTER BREAD SLICED

Manufacturer.—Zinsmaster Baking Company, Minneapolis.

Description.—Sliced white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from patent flour, water, sweetened condensed whole milk, sucrose, shortening, sodium chloride, yeast, corn and soya bean flours, and a yeast food containing calcium acid phosphate, ammonium sulphate, sodium chloride, potassium bromate, potassium iodate and corn starch.

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SATURDAY, JULY 6, 1935

LENGTHENING OF LIFE IN PERNICIOUS ANEMIA AND DIABETES

In the application of vital statistics to medical problems there are many opportunities for misinterpretation. The misuse "in certain quarters" of the mortality statistics for diabetes mellitus and pernicious anemia to disprove the claim of discovery of effective remedies has recently been pointed out by an expert statistician.[1]

The opposition of certain groups to experimental research has gathered support by the citing of the relatively static mortality from these two diseases since the introduction of insulin and of liver therapy. Enlightened thinkers will scarcely accept this view, but it has remained to Stocks [1] to show the fundamental unreliability of the evidence. He points out that the remedies employed are claimed to be curative only so long as treatment is continued. Therefore every patient under treatment for either of these two diseases must eventually die of one of three groups of causes: (1) a relapse of the disease due to failure to use a reliable and potent remedy and to continue its use with the necessary regularity, (2) some infectious process or acute disease such as influenza or some general disease such as cancer, or (3) some localized disease affecting a vital organ, such as the heart, lung or kidney. In the event of death falling in the first or third group, it is usually assigned to the original disease and the effect would be to postpone the age at which it occurred. The deaths classed under the second group must be relatively few compared with the others and hence would not be of great statistical importance.

In taking a hypothetical chronic disease for which a remedy of specific nature but effective only on continuous administration is discovered, the first effect would be to lower the gross mortality for a few years. For simplicity, it may be supposed that the average duration of life after diagnosis of the hypothetical disease was originally two years. The result of the new treatment was to increase this to ten years for cases arising at ages of from 15 to 25, to nine years at ages of from 25 to 35, to eight at from 35 to 45, and so on to four years at the age of 75 or over. According to this scheme there would be no change in the total deaths, but in the period just following introduction of the new treatment there would be at first a rapid fall in total annual deaths, and during that period the number of persons suffering from the disease in the community would increase year by year until stability between incidence and deaths was reached. The deaths, after an initial fall, would begin to rise again until this condition of stability was attained. The net result, then, would be not to reduce the mortality materially but to prolong life to a later age.

When the diabetes and pernicious anemia mortality was analyzed on this basis, the total mortality and age distribution following the introduction of insulin and of liver therapy were found to follow this pattern to a remarkable degree. Thus the important result of modern treatment of these diseases has been the prolongation of life rather than absolute reduction in mortality. The improved health and usefulness accruing to patients in these groups, so treated, and the addition of several years to the working period of their lives, is a great achievement.

1. Stocks, Percy: The Lengthening of Life by Modern Therapy in Pernicious Anemia and Diabetes, Brit. M. J. 1: 1013 (May 18) 1935.

MUSHROOM POISONING

The often uncritical enthusiasms engendered by the approach of summer warrants the renewed reminder that not all of nature's products are beneficent friends of man. The most deadly species of mushroom, Amanita phalloides, which causes more than 90 per cent of the deaths from mushroom poisoning, thrives from early June until the first autumn frosts. The flavor of this mushroom is reported to be delicious;[1] the young specimens are the most poisonous and are also most apt to be mistaken for the edible forms by the inexperienced mycologist. Other persons, even less prudent, may ingest toxic varieties after trying various "tests" on them. One of the common kitchen examinations consists in placing a piece of bright silver in the utensil while the plants are cooking. If the silver is not tarnished, the mushrooms are considered safe for consumption. The efficacy of this worthless test is believed in by an astounding number of people.

Some of the fatalities observed in this country due to mushroom poisoning are caused by another variety of mushroom, Amanita muscaria. This species also is common in all parts of the United States. The action of the toxins from this type of mushroom is, apparently, more rapid than is that of the poisons present in the various forms of Amanita phalloides. Thus there are in general two types of mushroom poisoning that may be encountered: the so-called rapid type (mycetismus nervosus), due to Amanita muscaria, and the delayed type (mycetismus choleriformis) caused by the

1. Legal Medicine and Toxicology, edited by Peterson, Frederick; Haines, W. S., and Webster, R. W., Philadelphia, W. B. Saunders Company, 1923.

various forms of Amanita phalloides. The rapid type of poisoning occurs within one to three hours after the ingestion of the fungi and is characterized by excessive salivation, perspiration and lacrimation. Nausea, vomiting, severe abdominal pains and diarrhea also occur. The pupils are contracted and convulsions and coma are seen in the severe cases. The mortality is low and the patients respond well to proper treatment.[1] The delayed type of mycetismus results from the ingestion of mushrooms belonging to the Amanita phalloides group. The onset is delayed until five to sixteen hours or more after the ingestion of the fungi. Abdominal pains are severe, and nausea and vomiting may be extreme. Diarrhea is nearly always present and the patients are generally prostrated from the outset. Jaundice nearly always occurs and renal damage is frequent. Symptoms resulting from damage to the central nervous system are usually present. The mortality in this type of poisoning is at least 50 per cent.

Four cases of poisoning by Amanita phalloides have been recently reported.[2] The value of this contribution is increased by the authors' presentation of complete pathologic studies in two fatal cases. Extreme degenerative changes were found in the parenchymal cells of the liver and to a lesser extent in the tubular epithelium of the kidneys. In both patients there was a severe widespread damage to the central nervous system. The brains were congested and edematous, and on microscopic section degenerative changes were observed in the cells of the cortex, hypothalamus, cerebellum and brain stem. Fat was found almost everywhere throughout the brain, and there were scattered areas of perivascular infiltration with lymphocytes. All the signs and symptoms that were observed in the two fatal cases could be explained by the pathologic changes observed. This report supplements the already extensive literature on the subject of mushroom poisoning; in addition, it serves to emphasize again the salient facts of this important subject.

THE USE OF ESTROGENIC SUBSTANCE IN TERMINATING HUMAN PREGNANCY

The rapid advances that have recently been made in the elucidation of the physiologic rôles of ovarian, placental and pituitary principles have led to extensive clinical use of many endocrine products in gynecology and obstetrics. Probably the most widely employed are the estrogenic preparations; these have been tried in a variety of disorders. As is common with glandular products, the original hopes engendered by a too ready transference to human beings of effects obtained in animals have been substantiated in only small degree. Reference to the commendably conservative article by Novak[1] in the series on Glandular Physiology and Therapy now appearing in THE JOURNAL reveals how limited are the actual clinical indications for estrogenic substance.

Depending on time relationships and dosage, estrogenic substance may be either supplementary or antagonistic to the corpus luteum hormone, progestin, in the effects on uterine mucosa; it is antagonistic to progestin (and to the gonadotropic principle of pregnancy urine also) in the effects on the irritability of the uterine musculature. (Estrogenic substance augments contractility, while progestin and the gonadotropic principle depress it.) As Allen[2] states, "large doses of estrogenic substance may override the effects of progestin and . . . progestin can inhibit the effects of estrogenic substance." In pregnancy the various endocrine factors concerned in the proper maintenance of this complex process are in an intricate equilibrium, which changes continuously from the time of nidation of the ovum until parturition. A marked imbalance in one or more of the factors concerned might conceivably terminate or prolong pregnancy.

Thus, many attempts have been made to interrupt pregnancy in animals by injection of estrogenic preparations,[3] or to prolong it by administration of progestin or the gonadotropic factor of pregnancy urine. In rats, guinea-pigs and rabbits, pregnancy (particularly early pregnancy) can readily be interrupted by estrogenic preparations or can be prolonged by progestin or the gonad-stimulating factor. However, attempts to transfer to human beings the results obtained in animals with theelin or theelol have usually failed.[4] As Allen[2] has pointed out, this is not surprising in view of the large amounts of estrogenic substance known to be present in women during pregnancy. However, the questions of dosage (in view of the low potency of the estrogenic preparations available until recently) and other physiologic factors involved have remained unsolved.

The report just published by Robinson, Datnow and Jeffcoate[5] of Liverpool is therefore of great importance. These authors investigated the effects of estrogenic preparations of high potency (10,000 and 100,000 international units per cubic centimeter) in terminating pregnancy at various stages from seven weeks to term. Estrogenic substance was used in multiple doses, either alone or followed after an interval of about 100 hours from the first dose by one or more doses of posterior pituitary extract (which has been found to be synergistic with theelin in its action on the uterine musculature) and/or quinine.

2. Vander Veer, J. B., and Farley, D. L.: Mushroom Poisoning (Mycetismus), Arch. Int. Med. **55**: 772 (May) 1935.

1. Novak, Emil: Glandular Physiology and Therapy: The Therapeutic Use of Estrogenic Substances, J. A. M. A. **104**: 1815 (May 18) 1935.

2. Allen, Edgar: Glandular Physiology and Therapy: The Physiology of Estrogenic Principles, J. A. M. A. **104**: 1498 (April 27) 1935.

3. Levin, Louis; Katzman, P. A., and Doisy, E. A.: Estrogenic Substances and Luteinizing Factor on Pregnancy in the Albino Rat, Endocrinology **15**: 207 (May-June) 1931. D'Amour, F. E.; D'Amour, M. C., and Gustavson, R. G.: Effects of Estrin and Other Hormones upon Pregnancy, J. Pharmacol. & Exper. Therap. **49**: 146 (Oct.) 1933; **51**: 353 (July) 1934. Robinson, Datnow and Jeffcoate.[5]

4. Witherspoon, J. T.: Attempted Induction of Labor by Injections of Theelin, Proc. Soc. Exper. Biol. & Med. **29**: 1063 (June) 1932.

5. Robinson, A. L.; Datnow, M. M., and Jeffcoate, T. N. A.: Induction of Abortion and Labor by Means of Oestrin, Brit. M. J. **1**: 749 (April 13) 1935.

In twelve cases of early pregnancy, from seven to fourteen weeks in duration, in which therapeutic abortion was indicated, estrogenic substance in a total dosage of from 50,000 to 6,800,000 international units, followed in all but one case by posterior pituitary extract and/or quinine, failed to produce abortion in a single instance.

In contrast to the effects in early pregnancy, in ten cases varying in duration from thirty to forty weeks, labor occurred in five after administration of total amounts of estrogenic substance of from 80,000 to 1,600,000 international units, followed in all but one of the five cases by posterior pituitary extract and/or quinine. However, as the authors point out, in two of the successful cases it appears possible that labor may have occurred spontaneously (one other case, in which the patient was at term, should probably also be included among those that gave "doubtful" responses).

In one case of twins with hydramnios in the thirty-fifth week, the patient responded to 50,000 units of estrogenic substance with onset of labor ninety hours after the first injection. Another patient in preeclampsia, also in the thirty-fifth week, responded to 20,000 units (the fetus in this case was anencephalic).

The most promising results were obtained in missed abortion (not, as the authors emphasize, in incomplete abortion). In ten of a group of twelve cases of intra-uterine death of the fetus, expulsion of the uterine contents occurred following total dosages of from 40,000 to 2,430,000 units. This occurred even when the dead fetus had been retained for many weeks. In six of these cases, estrogenic substance was used alone; in four, posterior pituitary extract and quinine or castor oil were given in addition. This is of particular interest, as the authors point out, in that Spielman, Goldberger and Frank [6] have noted that the amount of estrogenic substance in the blood is markedly decreased following intra-uterine death of the fetus.

In four cases of uterine inertia, administration of total amounts of from 20,000 to 1,300,000 units of estrogenic substance led to enhanced uterine contractility.

Robinson and his associates conclude from their studies that estrogenic substance, when administered near term, "may or may not induce premature labour, but that it is not a reliable means of induction." They point out that "it is an especially unsuitable method for cases in which it is necessary to bring on labor immediately because of the uncertain interval (up to seven or eight days) that intervenes between the commencement of treatment and the onset of expulsive contractions." They believe that the results in missed abortion are quite encouraging.

Thus it appears that, in woman, estrogenic substance is chiefly of value in enhancing the irritability of the uterus late in pregnancy and that, at least in the dosages used and by the methods employed, it is of little value in inducing abortion during the early stage (seven to fourteen weeks) covered by the investigation of Robinson and his collaborators. It must not be overlooked, however, that the work discussed, while valuable, is only a preliminary investigation. Much more needs to be known about the physiology of human pregnancy and particularly about the complex endocrine equilibriums involved.

6. Spielman, Frank; Goldberger, M. A., and Frank, R. T.: Hormone Diagnosis of Viable Pregnancy, J. A. M. A. **101**: 266 (July 22) 1933.

Current Comment

DERMAL ABSORPTION OF VITAMIN D

Several years ago, experiments [1] on rabbits and rats were reported suggesting that vitamin D was absorbed through the skin. Irradiated impure cholesterol suspended in cottonseed oil and applied to the depilated skin on the backs of the experimental animals completely protected them from rickets. Recently similar results have been obtained in rats administered viosterol by inunction. One investigator [2] has observed that the application of viosterol in either a liquid petrolatum or a wax base to the tail alone permitted the absorption of sufficient amounts of the antirachitic factor to prevent the development of rickets. The possibility of the oral ingestion of some of the material was precluded by carefully encasing the animal's tail in a glass tube. Further confirmatory evidence [3] has been obtained on rats fed a standard rachitogenic diet and given inunctions of viosterol in an ointment base on areas of skin from which the hair had been removed by a sulphide depilatory. Both roentgenograms and "line tests" showed that the animals thus treated were completely protected from rickets, whereas controls receiving inunctions of irradiated liquid petrolatum developed the condition. The subsequent dermal administration of viosterol to the rachitic control animals promptly promoted normal bone calcification. The fact that the irradiated liquid petrolatum controls developed rickets precludes the possibility that the results obtained with viosterol were due to the absorption of the irradiated lipid solvent, which then activated ergosterol in the tissues by secondary radiation. Thus it appears probable that vitamin D itself is absorbed directly from the skin. The practical value of this method of administering vitamin D remains to be determined. It may prove useful in infants and in subjects lacking the ability to utilize lipids administered orally. From the available data it appears probable, however, that the process of dermal absorption as compared with enteral absorption may not be an economical one. Although no attempt has been made to compare quantitatively the required doses by the two methods of administration, the amount employed daily in the latter experiments just described was forty-five times the recognized effective oral dose.

1. Hume, E. M.; Lucas, N. S., and Smith, H. H.: On the Absorption of Vitamin D from the Skin, Biochem. J. **21**: 362, 1927.
2. Amrhein, F. J.: Absorption of Vitamin D from the Skin, J. Am. Pharm. A. **23**: 182, 1934.
3. Astrowe, P. S., and Morgen, R. A.: Dermal Absorption of Vitamin D, Am. J. Dis. Child. **49**: 912 (May) 1935.

PROCEEDINGS OF THE ATLANTIC CITY SESSION

MINUTES OF THE EIGHTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ATLANTIC CITY, JUNE 10-14, 1935

(Concluded from page 2372, volume 104)

MINUTES OF THE SECTIONS

SECTION ON PRACTICE OF MEDICINE

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2 o'clock by Dr. Reginald Fitz, Boston, in the absence of Dr. George R. Minot, Boston.

Alphonse M. Schwitalla, S.J., St. Louis, was nominated for Associate Fellowship in the American Medical Association.

Drs. Simon S. Leopold and Louis M. Lieberman, Philadelphia, presented a paper on "Further Data on Artificial Pneumothorax in Experimental Lobar Pneumonia."

Drs. Francis G. Blake, Marion E. Howard and Winifred S. Hull, New Haven, Conn., presented a paper on "Artificial Pneumothorax in the Treatment of Lobar Pneumonia."

These two papers were discussed by Drs. Alfred Stengel, Philadelphia, Jesse G. M. Bullowa, New York, and Harold Brunn, San Francisco.

Dr. W. R. Kennedy, Montreal, read a paper on "Renal Amyloidosis." Discussed by Drs. Henry A. Christian, Boston; Walter de M. Scriver, Montreal, and S. Edward King, New York.

Dr. Emanuel Libman, New York, presented the Frank Billings Lecture, entitled "Some Aspects of Endocarditis, with Special Reference to the Subacute Variety."

Dr. W. F. Hamilton, Montreal, read a paper on "Pleural Shock." Discussed by Drs. Joseph A. Capps, Chicago; Victor S. Randolph, Phoenix, Ariz., and Jonathan C. Meakins, Montreal.

Dr. W. P. Warner, Toronto, read a paper on "Factors Causing Bronchiectasis; Their Clinical Application to Diagnosis and Treatment." Discussed by Drs. David T. Smith, Durham, N. C., and Harold Brunn, San Francisco.

THURSDAY, JUNE 13—AFTERNOON

Dr. James B. Collip, Montreal, read a paper on "The Antihormone Theory in Relation to Anterior Pituitary Physiology."

Dr. David P. Barr, St. Louis, read a paper on "Recent Advances in Knowledge of the Relationship of the Pituitary to Ovarian Hormones."

These two papers were discussed by Drs. Elmer L. Sevringhaus, Madison, Wis.; Archibald C. Campbell, Montreal; Joseph C. Aub, Boston, and Harold E. Simon, Birmingham, Ala.

Dr. Duncan Graham, Toronto, read the Canadian chairman's address.

Dr. Lewellys F. Barker, Baltimore, read the Osler Oration, entitled "Osler in America."

Dr. Lloyd F. Craver, New York, read a paper on "A Clinical Survey of the Etiology of Cancer."

Drs. Jacob Furth, H. W. Ferris and Paul Reznikoff, New York, presented a paper on "Relation of Experimental Leukemia of Animals to Human Leukemia."

Dr. W. Edward Chamberlain, Philadelphia, read a paper on "Modern Concepts of Roentgen Therapy in Cancer."

These three papers were discussed by Drs. G. E. Richards, Toronto; T. R. Waugh, Montreal; Louis K. Diamond, Boston, and Charles C. Lund, Boston.

FRIDAY, JUNE 14—AFTERNOON

The following officers were elected: chairman, Dr. William J. Kerr, San Francisco; vice chairman, Dr. C. L. Andrews, Atlantic City, N. J.; secretary, Dr. Joseph T. Wearn, Cleveland; executive committee: Dr. C. T. Stone, Galveston, Texas; Dr. George R. Minot, Boston; Dr. William J. Kerr, San Francisco.

Dr. E. B. Bradley, Lexington, Ky., read a report of the Committee on Examinations of the American College of Physicians.

Dr. Walter L. Bierring, Des Moines, Iowa, presented the following resolution:

Resolved, That a committee of three, including a chairman, be appointed by the chairman of the Section on Practice of Medicine to discuss with a committee from the American College of Physicians ways and means whereby an examining board, comparable to such boards already existing in certain specialties, may be set up for the purpose of certification of specialists in internal medicine.

On motion of Dr. Bierring, duly seconded, the resolution was adopted.

Drs. C. A. McKinlay and Hal Downey, Minneapolis, and Joseph Stasney, Rochester, Minn., presented a paper on "Infectious Mononucleosis." Discussed by Drs. A. H. Gordon, Montreal; Israel Davidsohn, Chicago, and C. A. McKinlay, Minneapolis.

Dr. Walter R. Campbell, Toronto, read a paper on "Dietary Factors in Health and Disease." Discussed by Dr. Henry A. Christian, Boston.

Dr. R. F. Farquharson, Toronto, read a paper on "The Importance of Rest and Liver Therapy in the Treatment of Subacute Combined Degeneration of the Cord." Discussed by Drs. William B. Castle, Boston; H. H. Hyland, Toronto; Roy R. Grinker, Chicago, and R. F. Farquharson, Toronto.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. John L. Yates, Milwaukee.

Dr. John L. Yates read a paper on "Therapeutic Significance of Normal and Morbid Formation and Distribution of Noncellular (Plasma) and Cellular Constituents of Blood and of Lymph."

Dr. William B. Castle, Boston, read a paper on "Treatment of Anemia in Surgical Conditions, with Especial Reference to Deficiency States."

Dr. John S. Lawrence, Rochester, N. Y., read a paper on "Variations in the Number of Leukocytes in Normal and Morbid States."

Dr. Charles H. Best, Toronto, read a paper on "Regulation of Blood Sugar."

Dr. E. C. Kendall, Rochester, Minn., read a paper on "Thyroxine and the Hormone Elaborated by the Adrenal Cortex."

Dr. Cecil K. Drinker, Boston, read a paper on "The Relation of Lymph Circulation to Streptococcic Infection."

Dr. Reuben L. Kahn, Ann Arbor, Mich., read a paper on "Antigens and Antibodies."

Dr. Jonathan C. Meakins, Montreal, presented a summary from an internist's point of view.

Dr. G. W. Crile, Cleveland, presented a summary from a surgeon's point of view.

These nine papers were discussed by Drs. William Dameshek, Boston, and William B. Castle, Boston.

THURSDAY, JUNE 13—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. William E. Gallie, Toronto.

The following papers were read as a symposium on "Anomalies in Blood Formation":

Dr. E. S. Mills, Montreal: "Pathology and Differential Diagnoses of Blood Dyscrasias Amenable to Treatment by Splenectomy."

Dr. C. A. Doan, Columbus, Ohio: "Hemolytopoietic Equilibrium and Emergency Splenectomy."

Dr. A. T. Bazin, Montreal: "Surgical Procedure and After-Care."

Dr. William E. Gallie, Toronto: "End Results."

These four papers were discussed by Drs. Irvin Abell, Louisville, Ky.; G. M. Curtis, Columbus, Ohio; B. K. Wiseman, Columbus, Ohio; H. C. Thompson, New York; William Dameshek, Boston; E. B. Krumbhaar, Philadelphia, and C. A. Doan, Columbus, Ohio.

The following papers were read as a symposium on "Anomalies in Blood Distribution":

Dr. David D. Berlin, Boston: "Total Thyroidectomy for Intractable Heart Disease." Discussed by Drs. John Hepburn, Toronto, and David D. Berlin, Boston.

Dr. Max M. Peet, Ann Arbor, Mich.: "Operative Treatment of Hypertension." Discussed by Drs. George J. Heuer, New York; Géza de Takáts, Chicago, and Max M. Peet, Ann Arbor, Mich.

Dr. Louis G. Herrmann, Cincinnati: "Nonoperative Treatment of Inadequate Peripheral Distribution of Blood." Discussed by Drs. H. M. Elder, Montreal; N. E. Freeman, Boston, and Louis G. Herrmann, Cincinnati.

Dr. E. J. McGrath, Cincinnati: "Experimental Peripheral Gangrene." Discussed by Drs. D. W. G. Murray, Toronto, and E. J. McGrath, Cincinnati.

FRIDAY, JUNE 14—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. John L. Yates, Milwaukee.

The following officers were elected: chairman, Dr. Howard M. Clute, Boston; vice chairman, Dr. William F. Rienhoff, Baltimore; secretary, Dr. Henry Cave, New York; delegate, Dr. Fred W. Rankin, Lexington, Ky.; alternate, Dr. Harold Brunn, San Francisco.

On motion by Dr. Fred W. Rankin, Lexington, Ky., seconded, it was voted that the Executive Committee of the Section on Surgery, General and Abdominal, appoint a board of five members to meet with the American Surgical Association, the American College of Surgeons and the Pacific Coast Association to discuss the advisability of establishing a qualifying board in general surgery, the preliminary and special qualifications to be expected of candidates and the type of examination to be given leading to qualification.

The following papers were read as a symposium on "Toxemia and Septicemia, Chronic Appendicitis, Manifestations of Cholelithiasis and Treatment of Jaundiced Patients":

Dr. D. T. Fraser, Toronto: "Staphylococcus Antitoxin and Toxoid."

Dr. W. S. Keith, Toronto: "Clinical Use of Staphylococcus Antitoxin and Toxoid."

Dr. W. J. Merle Scott, Rochester, N. Y.: "Principles of Treatment of Septicemia."

Dr. J. R. Reeves, Indianapolis: "Infections by Anaerobic Gas-Forming Bacilli."

These four papers were discussed by Drs. George A. Ramsay, London, Ont.; David Tillerson Smith, Durham, N. C., and D. T. Fraser, Toronto.

Dr. L. C. Simard, Montreal, read a paper on "Neuro-Appendicopathy." Discussed by Drs. H. W. Cave, New York, and L. C. Simard, Montreal.

Dr. Robert M. Zollinger, Boston, read a paper on "Significance of Pain and Vomiting in Cholelithiasis."

Dr. E. S. Judd, Rochester, Minn., read a paper on "Transfusions of Blood and Intravenous Administration of Dextrose in Jaundiced Patients."

These two papers were discussed by Drs. F. K. Boland, Atlanta, Ga.; W. J. Merle Scott, Rochester, N. Y., and E. S. Judd, Rochester, Minn.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. James R. McCord, Atlanta, Ga.

Drs. Aaron E. Kanter, Carl P. Bauer and Arthur H. Klawans, Chicago, presented a paper on "A New Biologic Test for Hormones in Urine as Applied to Various Clinical Problems." Discussed by Drs. Fredericka F. Freytag, Dayton, Ohio; Charles Mazer, Philadelphia, and Aaron E. Kanter, Chicago.

Drs. F. H. Falls, Julius E. Lackner and Leon Krohn, Chicago, presented a paper on "The Effect of Progestin and Estrogenic Substance on Human Uterine Contractions, and the Value of Progestin in the Prevention of Habitual and Spontaneous Abortions." Discussed by Drs. Samuel R. M. Reynolds, Brooklyn; Emil Novak, Baltimore; J. P. Pratt, Detroit, and Leon Krohn, Chicago.

Drs. S. F. Haines and R. D. Mussey, Rochester, Minn., presented a paper on "Certain Menstrual Disturbances Associated with Low Basal Metabolic Rates." Discussed by Drs. J. C. Litzenberg, Minneapolis; T. J. Williams, University, Va., and R. D. Mussey, Rochester, Minn.

Dr. John R. Fraser, Montreal, read the Canadian chairman's address, entitled "Maternal Mortality and Morbidity."

Drs. P. Brooke Bland, Arthur First and Leopold Goldstein, Philadelphia, presented a paper on "Clinical Investigation of Endocrine Sterility."

Dr. Paul Titus, Pittsburgh, read a paper on "Sterility: Analysis of Causes and Treatment."

These two papers were discussed by Drs. N. R. Kretzschmar, Ann Arbor, Mich.; Emil Novak, Baltimore; Isidor C. Rubin, New York; B. R. Almquest, Pittsburgh; A. D. Campbell, Montreal, and Arthur First, Philadelphia.

THURSDAY, JUNE 13—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. John R. Fraser, Montreal.

Dr. James R. Goodall, Montreal, read a paper on "Toxemia of Pregnancy: A Clinical Study." Discussed by Drs. J. C. Janney, Boston, and Katherine Kuder, New York.

Dr. H. B. Van Wyck, Toronto, read a paper on "The Clinical Significance of Weight Changes in Pregnancy." Discussed by Drs. Murray L. Brandt, New York; G. D. Royston, St. Louis, and A. W. Bingham, East Orange, N. J.

Dr. John Mann, Toronto, read a paper on "The Mechanism of Rotation in Occiput Posterior Positions." Discussed by Drs. E. L. King, New Orleans; W. E. Caldwell, New York; Joseph B. De Lee, Chicago; J. B. Jacobs, Washington, D. C., and John Mann, Toronto.

Dr. James R. McCord, Atlanta, Ga., read the chairman's address, entitled "Syphilis and Pregnancy: A Clinical Study of 2,500 Cases."

Drs. Harvey B. Matthews and Vincent P. Mazzola, Brooklyn, presented a paper on "The Intravenous Use of Hypertonic Dextrose in Obstetrics and Gynecology: An Experimental and Clinical Study." Discussed by Drs. James R. Miller, Hartford, Conn.; Joseph B. De Lee, Chicago; Charles W. Pavey, Columbus, Ohio, and Harvey B. Matthews, Brooklyn.

Dr. Harold L. Morris, Detroit, read a paper on "Hematuria as a Complication of Pregnancy." Discussed by Drs. John M. Bergland, Baltimore, and Joseph B. De Lee, Chicago.

FRIDAY, JUNE 14—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. James R. McCord, Atlanta, Ga.

The following officers were elected: chairman, Dr. Lyle G. McNeile, Los Angeles; vice chairman, Dr. W. J. Carrington, Atlantic City, N. J.

The following papers were read as a symposium on "Obstetric Anesthesia":

Drs. Beatrice E. Tucker and Harry B. W. Benaron, Chicago: "Parasacral, Pudendal and Local Infiltration Anesthesia in Obstetrics."

Drs. S. A. Cosgrove, Perry O. Hall and William J. Gleeson, Jersey City, N. J.: "Spinal Anesthesia, with Particular Reference to Its Use in Obstetrics."

Dr. Wesley Bourne, Montreal: "Vinyl Ether Obstetric Anesthesia for General Practice."

Dr. Ralph T. Knight, Minneapolis: "Cyclopropane Anesthesia in Obstetrics."

Dr. Edward W. Beach, Philadelphia: "Ethyl Ether, Chloroform, Nitrous Oxide and Ethylene Anesthesia in Obstetric Analgesia and Anesthesia."

Drs. James T. Gwathmey, New York, and C. O. McCormick, Indianapolis: "Rectal Ether and Oil."

These six papers were discussed by Drs. R. A. Gaughan, Hazelton, Pa.; Lyle G. McNeile, Los Angeles; Joseph B. De Lee, Chicago; Carrol J. Fairo, Cincinnati; H. F. Beckman, Indianapolis; E. Mabel H. Otis, Moline, Ill.; Harry B. W. Benaron, Chicago; S. A. Cosgrove, Jersey City, N. J.; Wesley Bourne, Montreal; Ralph T. Knight, Minneapolis; C. O. McCormick, Indianapolis, and James T. Gwathmey, New York.

SECTION ON OPHTHALMOLOGY

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. Arthur J. Bedell, Albany, N. Y.

Dr. W. Gordon M. Byers, Montreal, Canadian chairman, presented greetings from Canada.

Dr. Arthur J. Bedell, Albany, N. Y., read the chairman's address.

Mr. Leslie Paton, London, England, the guest of honor, read a paper on "Papilledema and Optic Neuritis: A Retrospect."

Dr. Martin Cohen, New York, read a paper on "Inflammatory Exophthalmos in Catarrhal Disorders of the Accessory Sinuses." Discussed by Drs. H. C. Naffziger, San Francisco; Gilbert Horrax, Boston; Alexander E. MacDonald, Toronto; Thomas B. Holloway, Philadelphia; Joseph D. Kelly, New York, and Martin Cohen, New York.

The following resolutions were read by Dr. Frederick H. Verhoeff, Boston, for the Executive Committee, to be presented to the House of Delegates Thursday afternoon:

WHEREAS, There have been many complaints regarding the action of some ophthalmologists in giving lectures to and consulting with opticians and optometrists; and

WHEREAS, It is universally conceded that to care for the diseases and conditions of the human eye demands the unusual knowledge of a graduate physician who has been especially prepared; and

WHEREAS, The eye is an integral part of the body; and

WHEREAS, No one but a physician so trained should be permitted to diagnose, treat or prescribe for eye conditions; and

WHEREAS, Lecture, address or any other form of instruction to opticians and optometrists by ophthalmologists is not only a breach of the Principles of Medical Ethics, which control our professional relationships, but is also to the detriment of the ocular health of the public by giving it a false sense of security; and

WHEREAS, General health and ocular comfort depend on the best medical care; therefore, be it

Resolved, That the Section on Ophthalmology of the American Medical Association declares that it is unethical for any member of the American Medical Association to give lectures or courses of instruction to or consult with any one not associated with the actual medical service; and be it further

Resolved, That the House of Delegates of the American Medical Association be asked to make a ruling to this effect.

On motion of Dr. Verhoeff, duly seconded and carried, the resolutions were adopted.

It was voted that the section recommend to the House of Delegates, through the Judiciary Council, that Mr. Leslie Paton, London, England, be made an honorary member of the American Medical Association.

Dr. Frank E. Burch, St. Paul, read a paper on "Association of Ectopia Lentis with Arachnodactyly." Discussed by Drs. William Zentmayer, Philadelphia; Ralph I. Lloyd, Brooklyn; M. N. Beigelman, Los Angeles; Edward Jackson, Denver, and Frank E. Burch, St. Paul.

Dr. Jonas S. Friedenwald, Baltimore, read a paper on "The Treatment of Anisophoria." Discussed by Drs. Walter B. Lancaster, Boston; Francis H. Adler, Philadelphia; Conrad Berens, New York, and Jonas S. Friedenwald, Baltimore.

THURSDAY, JUNE 13—AFTERNOON

Dr. Conrad Berens, New York, read a paper on "The Causes of Blindness in Children: Their Relation to Preventive Ophthalmology." Discussed by Drs. Albert D. Frost, Columbus, Ohio; S. W. Newmayer, Philadelphia; Thomas B. Holloway, Philadelphia; Harry S. Gradle, Chicago; E. V. L. Brown, Chicago; Mr. Leslie Paton, London, England; Mr. Lewis H. Carris, National Association for the Prevention of Blindness, New York; Trygve Gundersen, Boston, V. M. Hicks, Raleigh, N. C., and Conrad Berens, New York.

Drs. Norman P. Scala, Washington, D. C., and Ernest A. Spiegel, Philadelphia, presented a paper on "The Pupillary Reactions in Combined Lesions of the Posterior Commissure and of the Pupillodilator Tracts." Discussed by Drs. Harry S. Gradle, Chicago; C. W. Rutherford, Iowa City, and Ernest A. Spiegel, Philadelphia.

Dr. Alexander E. MacDonald, Toronto, read a paper on "Kinetic Stereoscopy or Stereoscopic Phenomena of a Moving Observer." Discussed by Drs. Frederick H. Verhoeff, Boston; Alfred Cowan, Philadelphia, and Alexander E. MacDonald, Toronto.

Drs. Phillips Thygeson and William F. Mengert, Iowa City, presented a paper on "The Virus of Inclusion Conjunctivitis: Further Observations." Discussed by Drs. Clyde A. Clapp, Baltimore, and Phillips Thygeson, Iowa City.

Dr. Ruby Kathryn Daniel, Rochester, Minn., read a paper on "Allergy and Cataracts: Deductions Drawn from Clinical Studies." Discussed by Drs. Alan C. Woods, Baltimore; Derrick T. Vail Jr., Cincinnati; W. R. Buffington, New Orleans; C. Ulysses Moore, Portland, Ore., and Ruby K. Daniel, Rochester, Minn.

At the Demonstration Session the following were shown:

Dr. Frederick H. Verhoeff, Boston, presented a new needle holder for ophthalmic and other delicate surgery.

Dr. Albert D. Ruedemann, Cleveland, presented a camera for photography of the conjunctival vessels under high magnification.

Dr. Walter B. Lancaster, Boston, presented some astigmatic charts.

Dr. Clifford B. Walker, Los Angeles, presented new equipment for the galvanic treatment of separated retina.

Dr. Mark J. Schoenberg, New York, presented an improved exophthalmometer and a biomicroscope for use in delicate surgical operations.

Dr. Sidney L. Olsho, Philadelphia, presented bifocal lenses for patients with myopia.

Dr. Conrad Berens, New York, presented forceps for use in surgery of the ocular muscles.

Dr. John Green, St. Louis, presented a simplified ophthalmoscope for Dr. William Henry Luedde, St. Louis.

Dr. Harvey E. Thorpe, Pittsburgh, presented a forceps for removal of lead shot from the vitreous.

Dr. Richard Townley Paton, New York, presented a moving picture, following adjournment of the session, entitled "Cinefusionometer: A Treatment and Diagnostic Instrument."

FRIDAY, JUNE 14—AFTERNOON

Dr. Albert C. Snell, Rochester, N. Y., presented the report of the Committee on Compensation Tables. The report was accepted and the committee continued.

Dr. Edward Jackson, Denver, presented the report of the American Committee on Optics and Visual Physiology. The report was accepted.

The report of the Committee on the Knapp Testimonial Fund was presented by the treasurer, Dr. Parker Heath, Detroit. The report was accepted.

Dr. G. P. Guibor, Chicago, gave a short report of his work on squint.

The Committee on Awarding the Knapp Medal reported that it was unanimously decided not to make any recommendation this year. The report was accepted.

The report of the Committee on the American Board of Ophthalmology was read by Dr. Walter B. Lancaster, Boston. The report was accepted.

The report of the Committee on National Museum of Ophthalmic Pathology was presented by Dr. Jonas S. Friedenwald, Baltimore. The report was accepted.

The report of the Committee from the Section to Cooperate with the National Committee for the Prevention of Blindness was presented by Dr. Thomas B. Holloway, Philadelphia. The report was accepted.

The report of the Committee on Scientific Exhibit from the Section was presented by Dr. Georgiana Dvorak Theobald, Oak Park, Ill. The report was accepted.

The Report of the Committee to Confer with the National Conference on Nomenclature of Disease was presented by Dr. Walter B. Lancaster, Boston. It was voted that Dr. Lancaster be delegated to receive future inquiries on nomenclature but that the committee be discharged with thanks.

Dr. Emory Hill, Richmond, Va., reported as delegate to the House of Delegates.

The report of the Committee on Museum of Ophthalmic History was read by Dr. Parker Heath, Detroit.

The report of the Committee on Ophthalmic Standards was presented by Sanford R. Gifford, Chicago. It was voted that the report be accepted and the committee continued.

The following officers were elected: chairman, Dr. John Green, St. Louis; vice chairman, Dr. Albert C. Snell, Rochester, N. Y.

Dr. Clifford B. Walker, Los Angeles, was appointed as member of the American Board of Ophthalmology for four years and Dr. John Green to serve for one year.

Dr. William Henry Luedde, St. Louis, was reappointed to fill the vacancy on the American Committee on Optics and Visual Physiology.

The following were appointed to serve on the Committee on Scientific Exhibit: Dr. Georgiana Dvorak Theobald, Oak Park, Ill., chairman; Dr. Albert N. B. Lemoine, Kansas City, Mo., and Dr. Parker Heath, Detroit.

The Ophthalmic Research Medal of the American Medical Association was awarded by Dr. Frederick Verhoeff, Boston, to Dr. Jonas S. Friedenwald, Baltimore.

The following members were elected to serve as the Knapp Medal Award Committee: Dr. George E. de Schweinitz, Philadelphia; Dr. William E. Shahan, St. Louis, and Dr. F. Phinizy Calhoun, Atlanta, Ga.

The members stood in silence in tribute to the memory of those who passed away during the year, and particularly to the memory of Dr. William Campbell Posey.

Dr. Edward Jackson, Denver, read a paper on "The Control of Myopia." Discussed by Drs. Albert C. Snell, Rochester, N. Y.; F. T. Tooke, Montreal; S. W. Newmayer, Philadelphia; Meyer Wiener, St. Louis; Joseph I. Pascal, New York; Walter B. Lancaster, Boston, and Edward Jackson, Denver.

Dr. Francois Badeaux, Montreal, read a paper on "Herpes Ophthalmicus: I. Radiotherapy in Herpes Zoster Ophthalmicus and Herpetic Keratitis." Discussed by Drs. Eugene P. Pendergrass, Philadelphia; Laura A. Lane, Ann Arbor, Mich., and Francois Badeaux, Montreal.

Dr. Trygve Gundersen, Boston, read a paper on "Herpes Ophthalmicus: II. Herpes Corneae, with Special Reference to Its Treatment with Tincture of Iodine." Discussed by Drs. Everett L. Goar, Houston, Texas; Jonas S. Friedenwald, Baltimore, and Trygve Gundersen, Boston.

Drs. S. J. Beach and William R. McAdams, Portland, Maine, presented a paper on "Intracapsular Extraction in the Average Practice: Report of One Hundred Cases." Discussed by Drs. Walter R. Parker, Detroit; John Green, St. Louis; J. W. Millette, Dayton, Ohio; Frederick H. Verhoeff, Boston, and William R. McAdams, Portland, Maine.

Dr. Arthur M. Culler, Dayton, Ohio, read a paper on "Artificial Fever Therapy of Ocular Syphilis." Discussed by Drs. William L. Benedict, Rochester, Minn.; Elmer L. Whitney, Detroit, and Arthur M. Culler, Dayton, Ohio.

Dr. Melverton E. Trainor, Los Angeles, read a paper on "Trainor Operation for Lid Ptosis." Discussed by Drs. Arnold Knapp, New York; E. C. Ellett, Memphis, Tenn., and Melverton E. Trainor, Los Angeles.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:05 by the chairman, Dr. John J. Shea, Memphis, Tenn.

The chairman announced the death of Dr. John W. Carmack, Dr. William V. Mullin and Dr. D. Campbell Smyth during the past year, and the members arose in tribute to their memory.

Dr. Joseph Beck, Chicago, of the Board of Examiners, reported that the board had examined 162 candidates during the past year. Two extra examinations were held. Dr. Beck called attention to the report from the Board of Examiners to the Advisory Board of the Medical Specialties.

On motion by Dr. Horace Newhart, duly seconded, it was voted that the following resolution be presented to the House of Delegates Thursday afternoon:

WHEREAS, Certain agents and contributors of electric hearing devices have offered to physicians a commission or bonus for referring to them hard of hearing persons to whom they effect a sale; therefore, be it

Resolved, By the Section on Laryngology, Otology and Rhinology of the American Medical Association that it condemns as unethical and unfair to the purchaser the practice on the part of any agent or distributor of a hearing device who offers to pay to a physician, or any one not an authorized agent, any commission or bonus for referring a person to whom he makes a successful sale. The acceptance of such commission by a physician is interpreted as a violation of the principles of ethical practice; and be it further

Resolved, That it is the sense of this section that the use of audiometers in the hands of persons other than regularly qualified physicians be restricted to the measuring of hearing acuity for the purpose of detecting hearing loss and for selecting or constructing hearing aids best suited to the special needs of the individual hard of hearing person.

It was moved by Dr. Joseph Beck, Chicago, duly seconded and carried, that David J. Goodfriend, D.D.S., Philadelphia, and Oscar Koenig, D.D.S., Newark, N. J., be recommended to Associate Fellowship.

Dr. D. E. S. Wishart, Toronto, read the address of Dr. W. J. McNally, Montreal, Canadian chairman, entitled "Milestones in the Recent Development of Our Knowledge of Hearing and Balancing."

Mr. Norman Patterson, London, England, read a paper on "Carcinoma of the Larynx: A Plea for Conservative Surgery in Certain Cases in Which Laryngectomy Might Be Considered Necessary." Discussed by Drs. H. B. Orton, Newark, N. J.; Louis H. Clerf, Philadelphia, and Mr. Norman Patterson, London, England.

Dr. David L. Thomson, Montreal, read a paper on "Aspects of Mineral Metabolism." Discussed by Drs. Ralph A. Fenton, Portland, Ore.; J. A. Babbitt, Philadelphia, and David L. Thomson, Montreal.

Dr. John B. McMurray, Washington, Pa., read a paper on "A Study of Clinical Cases with Vertigo as a Cardinal Symptom." Discussed by Drs. K. A. MacKenzie, Halifax, N. S.; D. E. S. Wishart, Toronto; H. R. Slack Jr., Baltimore; George E. Shambaugh Jr., Chicago, and John B. McMurray, Washington, Pa.

Dr. Leroy A. Schall, Boston, read a paper on "Neoplasms Involving the Middle Ear." Discussed by Drs. B. H. Shuster, Philadelphia; Joseph Beck, Chicago; George M. Coates, Philadelphia; Frank R. Spencer, Boulder, Colo., and Leroy A. Schall, Boston.

THURSDAY, JUNE 13—MORNING

Dr. John J. Shea, Memphis, Tenn., read the chairman's address, entitled "The Clinical Consideration of the Morphology of the Sinuses."

Dr. Edward Clay Mitchell, Memphis, Tenn., read a paper on "The Pediatric View of Otolaryngology." Discussed by Drs. Percy Wright, Montreal; H. Marshall Taylor, Jacksonville, Fla.; Simon L. Ruskin, New York, and Edward Clay Mitchell, Memphis, Tenn.

Dr. Hector Mortimer, Montreal, read a paper on "The Hormone Factors Involved in the Evolution, Development and Growth of the Paranasal Sinuses." Discussed by Drs. James B. Collip, Montreal; Charles W. Dunn, Philadelphia, and Hector Mortimer, Montreal.

Dr. Gregor W. McGregor, Toronto, read a paper on "Bone Proliferation in Accessory Sinuses: A Pathologic Study." Dis-

cussed by Drs. Ralph A. Fenton, Portland, Ore.; S. R. Skillern Jr., Philadelphia; H. Z. Semenov, Los Angeles; K. M. Houser, Philadelphia, and Gregor W. McGregor, Toronto.

The section went into executive session. The following resolution was read by Dr. Burt R. Shurly, Detroit, delegate, and adopted:

WHEREAS, The medical profession has an interest in public safety and in the preservation of life and the preventing of injury, and

WHEREAS, The motor vehicle has been responsible for an ever-increasing loss of life and limb, and

WHEREAS, The damage to humanity may be curtailed by careful physical examination of motor vehicle drivers, including stringent test of color blindness, sight and hearing, as well as other physical and mental qualifications; therefore, be it

Resolved, That the Section on Laryngology, Otology and Rhinology request the House of Delegates to appoint a special committee to study such legislation as may be required to regulate and prescribe appropriate tests for the licensing of all drivers of motor vehicles and recommend such uniform legislation in the several states.

Dr. George E. Hodge, Montreal, read a paper on "The Relationship of Bronchiectasis to Paranasal Sinus Infection." Discussed by Drs. E. G. Gill, Roanoke, Va.; Herman J. Moersch, Rochester, Minn.; Frank R. Spencer, Boulder, Colo.; Myron Metzenbaum, Cleveland, and George E. Hodge, Montreal.

Dr. Frederick M. Law, New York, read a paper on "Errors in Interpretation of Roentgenograms in Otolaryngology." Discussed by Drs. W. E. Chamberlain, Philadelphia; S. R. Skillern Jr., Philadelphia, and Frederick M. Law, New York.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. Ralph A. Fenton, Portland, Ore.; vice chairman, Dr. E. M. Seydell, Wichita, Kan.; secretary, Dr. Gordon B. New, Rochester, Minn.

Dr. Chevalier Jackson, Philadelphia, reported for the Committee on Lye Legislation that a model lye bill had been passed in New York. The committee is now at work in states that lack legislation for proper labeling of caustics. It was voted that the report be accepted and a vote of thanks be sent Mr. B. R. Richards, Department of Health, New York.

Dr. William P. Wherry, Omaha, read the report of the Committee on the Otorhinologic Hygiene of Swimming for the chairman, H. Marshall Taylor, Jacksonville, Fla. It was recommended that children subject to nasal or aural disease who belong to certain organizations such as the Boy Scouts, which require proficiency in swimming in order that the child may retain his membership, should be permitted to substitute other physical attainments, on the recommendation of the attending otolaryngologist. The recommendation was adopted. It was voted that thanks be extended to the committee and that the committee be continued.

Dr. Gabriel Tucker, Philadelphia, presented a new method of removal of foreign bodies from the stomach.

Dr. Walter A. Wells, Washington, D. C., presented a new audiometer.

Dr. Horace Newhart, Minneapolis, called attention to an effective sound testing room on exhibit outside.

Dr. Claude C. Cody, Houston, Texas, read a paper on "Brucellosis in Otolaryngology." Discussed by Drs. Redvers Thompson, Ste. Anne de Bellevue, Que.; Walter M. Simpson, Dayton, Ohio; Caesar Hirsch, New York, and Claude C. Cody, Houston, Texas.

Drs. Chevalier Jackson and Chevalier L. Jackson, Philadelphia, presented a paper on "Contact Ulcer of the Larynx." Discussed by Drs. H. S. Birkett, Montreal, and Gabriel Tucker, Philadelphia.

Dr. Samuel J. Kopetzky, New York, read a paper on "The Diagnosis and Differential Diagnostic Data of Specific Types of Suppuration in the Petrosal Pyramid." Discussed by Drs. J. A. Sullivan, Toronto; Henry K. Taylor, New York; Ralph Almour, New York; Simon L. Ruskin, New York, and Samuel J. Kopetzky, New York.

Dr. Ernest E. Scharfe, Montreal, read a paper on "The Value of Speech Training in Cleft Palate and Other Mouth Conditions." Discussed by Drs. R. R. Fitzgerald, Montreal; V. H. Kazanjian, Boston; G. M. Dorrance, Philadelphia, and Ernest E. Scharfe, Montreal.

Dr. M. C. Myerson, New York, read a paper on "Tuberculosis of the Larynx Requiring Tracheotomy." Discussed by Drs. Frank R. Spencer, Boulder, Colo.; George B. Wood, Philadelphia; Gabriel Tucker, Philadelphia; Joseph I. Kemler, Baltimore, and M. C. Myerson, New York.

SECTION ON PEDIATRICS

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. A. Graeme Mitchell, Cincinnati.

Dr. A. Graeme Mitchell, Cincinnati, read the chairman's address, entitled "Critical Interpretation of Clinical Observations."

Dr. R. G. Hoskins, Boston, read a paper on "Progress and Problems in Endocrinology."

Dr. Henry F. Helmholz, Rochester, Minn., read a paper on "Therapeutic Results with the Ketogenic Diet in Urinary Infections." Discussed by Dr. Edward L. Bauer, Philadelphia.

Dr. Gladys L. Boyd, Toronto, read a paper on "Pulmonary Collapse in Children." Discussed by Drs. Joseph Stokes Jr., Philadelphia; Joseph S. Wall, Washington, D. C., and William E. Anspach, Chicago.

The chairman appointed Drs. Clifford Sweet, Oakland, Calif., and Horton Casparis, Nashville, Tenn., as a resolutions committee.

Dr. Pearl F. Summerfeldt, Toronto, read a paper on "Iron and Its Availability in Foods." Discussed by Dr. C. Ulysses Moore, Portland, Ore.

Drs. Alan G. Brown and Edward A. Morgan, Toronto, presented a paper on "Cyanosis of the New-Born." Discussed by Drs. Ethel C. Dunham, New Haven, Conn.; John D. Donnelly, Bala-Cynwyd, Pa., and Clifford Sweet, Oakland, Calif.

THURSDAY, JUNE 13—MORNING

Dr. Franklin P. Gengenbach, Denver, read a paper on "When Pediatricians Take Inventory." Discussed by Dr. Borden S. Veeder, St. Louis.

Dr. Alan G. Brown, Toronto, Canadian chairman, addressed the session.

Dr. Bret Ratner, New York, read a paper on "Milk Allergy and Its Basic Treatment." Discussed by Drs. Charles G. Kerley, New York; Samuel Goldberg, Philadelphia; Albert H. Rowe, Oakland, Calif.; George Piness, Los Angeles, and Franklin P. Gengenbach, Denver.

Dr. Henry P. Wright, Montreal, read a paper on "Allergy and Immunity in Childhood Tuberculosis." Discussed by Drs. J. C. Gittings, Philadelphia; M. James Fine, Newark, N. J., and A. Graeme Mitchell, Cincinnati.

Dr. George L. Waldbott, Detroit, read a paper on "The Allergic Theory of So-Called Thymus Death." Discussed by Drs. B. S. Kline, Cleveland, and A. Graeme Mitchell, Cincinnati.

Dr. Frederick F. Tisdall, Toronto, read a paper on "Inadequacy of Present Dietary Standards." Discussed by Drs. Walter B. Stewart, Atlantic City, N. J.; Harry H. Donnally, Washington, D. C.; Clifford Sweet, Oakland, Calif., and Herbert L. Elias, Rockville Centre, N. Y.

Dr. Lawrence T. Royster, University, Va., read a paper on "Body Type in Negro Children." Discussed by Drs. Howard C. Carpenter, Philadelphia; Frank Lee Bivings, Atlanta, Ga.; Harold C. Stuart, Boston, and Emil Bogen, Olive View, Calif.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. Horton Casparis, Nashville, Tenn.; vice chairman, Dr. Hugh Dwyer, Kansas City, Kans.; secretary, Dr. Ralph M. Tyson, Philadelphia; delegate, Dr. William Weston, Columbia, S. C.; alternate, Dr. A. Graeme Mitchell, Cincinnati; representative on Scientific Exhibit, Dr. F. Thomas Mitchell, Memphis, Tenn.

On motion of Dr. A. H. Parmelee, Oak Park, Ill., seconded and carried, thanks were extended to Dr. Isaac A. Abt for his term of service as delegate.

Dr. F. Thomas Mitchell, Memphis, Tenn., presented the report of the Committee on Scientific Exhibit.

Dr. Isaac A. Abt, Chicago, presented the report of the delegate to the House of Delegates. The report was adopted.

Dr. Frank C. Neff of Kansas City presented the Report of the Committee on the Jacobi Fund. On motion regularly made and seconded, it was voted that the report be adopted.

Drs. Arthur Hawley Parmelee, Oak Park, Ill., and Louis J. Halpern, Chicago, presented a paper on "The Diagnosis of Congenital Syphilis." Discussed by Drs. Joseph Yampolsky, Atlanta, Ga., Henry H. Perlman, Philadelphia, and Arthur Hawley Parmelee, Oak Park, Ill.

Dr. Fred W. Schlutz, Chicago, read a paper on "Systemic Thrush Infection." Discussed by Drs. Isaac A. Abt, Chicago, and F. W. Schlutz, Chicago.

Dr. J. Norman Henry, Philadelphia, read a paper on "A Study of Immunization Against Scarlet Fever in Charitable Institutions and Public Schools of Philadelphia." Discussed by Drs. John A. Toomey, Cleveland; P. F. Lucchesi, Philadelphia; Theodore Melnick, Philadelphia, and J. Norman Henry, Philadelphia.

Dr. George M. Retan, Syracuse, N. Y., read a paper on "The Development of the Therapeutic Use of Forced Perivascular (Spinal) Drainage." Discussed by Drs. Temple S. Fay, Philadelphia; Harry Lowenburg, Philadelphia; Tracy J. Putnam, Boston, and George M. Retan, Syracuse, N. Y.

Drs. Maurice Brodie and William H. Park, New York, presented a paper on "Active Immunization Against Poliomyelitis: Experimental and Human Studies." Discussed by Drs. John A. Kolmer, Philadelphia; Alton Goldbloom, Montreal, and Maurice Brodie, New York.

Dr. Josephine B. Neal, New York, read a paper on "Meningococcic Meningitis in Children." Discussed by Drs. Bronson Crothers, Boston; Emily P. Bacon, Philadelphia, and Josephine B. Neal, New York.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. Carl H. Greene, New York.

Dr. V. E. Henderson, Toronto, read the Canadian chairman's address, following which he took the chair and presided throughout the afternoon session.

Drs. C. W. Chapman and C. A. Morrell, Ottawa, Ont., presented a paper on "Standardization and Potency of Digitalis Preparations."

Drs. H. E. Rykert and John Hepburn, Toronto, presented a paper on "The Intravenous Use of Strophanthin in the Treatment of Auricular Fibrillation."

Dr. Charles W. Greene, Columbia, Mo., read a paper on "Response of Coronary Vessels to Various Organic Drugs."

These three papers were discussed by Drs. E. E. Nelson, Washington, D. C.; E. Fullerton Cook, Philadelphia; Harry Gold, New York; Tasker Howard, Brooklyn; William D. Stroud, Philadelphia; V. A. Lapenta, Indianapolis; F. G. Atwood, New Haven, Conn.; Louis F. Bishop Jr., New York, and Benjamin Jablons, New York.

Dr. E. M. Watson, London, Ont., read a paper on "Clinical Experiences with Wheat Germ Oil (Vitamin E)." Discussed by Drs. E. D. Plass, Iowa City; Paul Titus, Pittsburgh, and C. W. Chapman, Ottawa, Ont.

THURSDAY, JUNE 13—AFTERNOON

The meeting was called to order at 2:05 by the chairman, Dr. Carl H. Greene, New York. Dr. V. E. Henderson, Toronto, Canadian chairman, presided during part of the session.

On motion by Dr. Leonard G. Rowntree, Philadelphia, duly seconded and carried, the following were nominated for Associate Fellowship in the American Medical Association: William C. MacTavish, New York; Clarence W. Muehlberger, Chicago, and Marie Severac, Philadelphia.

Dr. Carl H. Greene, New York, read the chairman's address, entitled "The Personal Element in Therapeutics."

Dr. Herman O. Mosenthal, New York, read a paper on "Hyperglycemia: Evaluation in the Treatment of Diabetes Mellitus." Discussed by Drs. Elliott P. Joslin, Boston; Edwin J. Kepler, Rochester, Minn.; W. S. Collens, Brooklyn; Charles T. Maxwell, Sioux City, Iowa, and A. A. Herold, Shreveport, La.

Drs. Arthur Grollman and W. M. Firor, Baltimore, presented a paper entitled "Experimental Studies on Replacement Therapy in Adrenal Insufficiency." Discussed by Drs. Edwin J. Kepler, Rochester, Minn.; R. G. Hoskins, Boston, and Leonard G. Rowntree, Philadelphia.

Drs. Leonard G. Rowntree and J. H. Clark, Philadelphia, and A. M. Hanson, Faribault, Minn., presented a paper on "The Biologic Effects Following the Continuous Administration of Pineal Extract to Successive Generations." Discussed by Dr. R. G. Hoskins, Boston.

Dr. D. Roy McCullagh, Cleveland, read a paper on "The Pharmacology of Testicular Hormones." Discussed by Drs. William E. Lower, Cleveland; R. G. Hoskins, Boston, and James B. Collip, Montreal.

Drs. Maurice L. Tainter, Windsor C. Cutting, Andrew B. Stockton and E. Hines, San Francisco, presented a paper on "The Metabolic and Antiobesity Actions of Dinitrophenol." Discussed by Drs. Maurice Bruger, New York, and Frank A. Evans, Pittsburgh.

Dr. Tom D. Spies, Cleveland, read a paper on "The Treatment of Pellagra." Discussed by Drs. Henry L. Bockus, Philadelphia; W. H. Sebrell Jr., Washington, D. C.; L. K. Riggs, New Brunswick, N. J.; A. A. Herold, Shreveport, La., and Russell L. Haden, Cleveland.

FRIDAY, JUNE 14—AFTERNOON

The following officers were elected: chairman, Dr. C. D. Leake, San Francisco; vice chairman, Dr. N. C. Gilbert, Chicago; secretary, Dr. Russell L. Haden, Cleveland; delegate, Dr. Cary Eggleston, New York; alternate, Dr. N. M. Keith, Rochester, Minn.; executive committee, Dr. C. D. Leake, San Francisco; Dr. Carl H. Greene, New York, and Dr. John H. Musser, New Orleans.

Dr. Clark W. Heath, Boston, read a paper on "The Clinical Significance of Problems of Absorption in the Human Gastro-Intestinal Tract." Discussed by Drs. Thomas T. Mackie, New York; T. Grier Miller, Philadelphia; Samuel Goldschmidt, Philadelphia, and Harold S. Connamacher, Newark, N. J.

Dr. Kenneth I. Melville, Montreal, read a paper on "Comparative Effects of Pressor and Oxytocic Fractions of Posterior Pituitary Extract on Blood Pressure and Intestinal Activity." Discussed by Dr. D. Roy McCullagh, Cleveland, and Kenneth I. Melville, Montreal.

Dr. Franklin A. Weigand, Philadelphia, read a paper on "The Diuretic Action of Intravenous Sodium Dehydrocholate." Discussed by Drs. B. B. Vincent Lyon, Philadelphia; Abraham Cantarow, Philadelphia, and Franklin A. Weigand, Philadelphia.

Drs. Norman M. Keith and Melvin W. Binger, Rochester, Minn., presented a paper on "The Diuretic Action of Potassium Salts." Discussed by Drs. M. Herbert Barker, Chicago; Carl H. Greene, New York, and Melvin W. Binger, Rochester, Minn.

Drs. Joseph Kovacs, Irving S. Wright and Leslie Saylor, New York, presented a paper on "A Pharmacologic and Therapeutic Study of Certain Choline Derivatives." Discussed by Drs. V. E. Henderson, Toronto, and Isaac Starr, Philadelphia.

Dr. Fred E. Angle, Kansas City, Kan., read a paper on "Treatment of Acute and Chronic Brucellosis." Discussed by Dr. Harold J. Harris, Westport, N. Y.

SECTION ON PATHOLOGY AND PHYSIOLOGY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:20 by the chairman, Dr. Elias P. Lyon, Minneapolis, who introduced Dr. Ludvig Hektoen, honorary chairman, to preside during the remainder of the session.

The following papers were read as an anniversary program by founders of the section:

Dr. Ludvig Hektoen, Chicago: "The Specificness of Streptococci" (honorary chairman's address).

Dr. Walter L. Bierring, Des Moines, Iowa: "Development of Pathology Since 1900."

Dr. George H. Simmons, of Miami, Fla., one of the founders of the section, made a brief address.

Dr. James B. Herrick, Chicago: "Internal Medicine Since 1900."

Dr. George Blumer, New Haven, Conn.: "Relationship of Pathologic Training to Clinical Medicine."

THURSDAY, JUNE 13—MORNING

The following were appointed by the chair as a nominating committee: Drs. Eugene R. Whitmore, Washington, D. C.; A. C. Ivy, Chicago, and H. J. Corper, Denver.

The following were nominated to Associate Membership in the Association: Dr. Paul R. Cannon, professor of pathology, University of Chicago; Paul L. Day, Ph.D., professor of biologic chemistry, University of Arkansas, Fayetteville, Ark.; Frank A. Hartman, Ph.D., professor of physiology, Ohio State University, Columbus, Ohio, and Dr. William H. Woglom, experimental pathologist, New York.

Dr. Elias P. Lyon, Minneapolis, read the chairman's address, entitled "I Am Automatic."

The following papers were read as a symposium on "The Autonomic Nervous System":

Dr. Albert Kuntz, St. Louis: "Essential Anatomy."

Dr. Anton J. Carlson, Chicago: "Essential Physiology."

Dr. D. E. Jackson, Cincinnati: "Essential Pharmacology."

Drs. Loyal Davis and Lewis J. Pollock, Chicago: "The Rôle of the Autonomic Nervous System in the Causation of Pain."

Dr. George E. Brown, Rochester, Minn.: "Clinical Tests of the Functions of the Sympathetic Nervous System."

Dr. Alfred W. Adson, Rochester, Minn.: "Indications for Surgery on the Sympathetic Nervous System."

These six papers were discussed by Drs. W. J. Merle Scott, Rochester, N. Y.; Irving S. Wright, New York; James C. White, Boston; Emmett Lee Jones, Cumberland, Md.; Albert Kuntz, St. Louis; Anton J. Carlson, Chicago, and Alfred W. Adson, Rochester, Minn.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. Henry C. Sweany, Chicago; vice chairman, Dr. W. E. Garrey, Nashville, Tenn.; secretary, Dr. J. J. Moore, Chicago; delegate, Dr. David J. Davis, Chicago; alternate, Dr. J. J. Moore, Chicago.

The secretary read the following report: "The committee appointed to consider the possibilities of forming a qualifying board for pathologists in conformity with the desires of the Advisory Board of Medical Specialties of the American Medical Association met at a meeting in Atlantic City, June 7, 1935. They are agreed that such a qualifying board should be formed at this time and recommend that a committee of three or more be appointed to meet with similar committees from the allied societies with power to act in the immediate formation of a Specialty Board in Pathology.

J. J. MOORE, Chicago.
E. B. KRUMBHAAR, Philadelphia.
FRANK W. HARTMAN, Detroit.

On the motion of Dr. Anton J. Carlson, Chicago, seconded and carried, the report was approved.

Dr. William Boyd, Winnipeg, Manit., read the Canadian chairman's address, entitled "The Relation of Pathology to Medicine."

Dr. E. Perry McCullough, Cleveland, read a paper on "Positive Friedman Tests in Nonpregnant Individuals."

Dr. R. H. Freyberg and L. H. Newburgh, Ann Arbor, Mich., presented a paper on "The Choice and Interpretation of Tests of Renal Efficiency." Discussed by Dr. Herman O. Mosenthal, New York.

Dr. John A. Kolmer, Philadelphia, read a paper on "Susceptibility and Immunity in Relation to Vaccination in Acute Anterior Poliomyelitis." Discussed by Drs. William H. Park, New York; H. T. Kramer, Brooklyn, and John A. Kolmer, Philadelphia.

Dr. Jesse G. M. Bullowa, New York, read a paper on "Reliability of Sputum Typing in the Pneumonias." Discussed by Drs. William H. Park, New York; S. W. Sappington, Bryn Mawr, Pa., and Jesse G. M. Bullowa, New York.

Dr. Charles C. Macklin, London, Ont., read a paper on "Alveolar Pores and Their Significance in the Human Lung." Discussed by Drs. William Boyd, Winnipeg, Manit.; E. B. Krumbhaar, Philadelphia, and Charles C. Macklin, London, Ont.

Dr. B. K. Wiseman, Columbus, Ohio, read a paper on "The Nature and Importance of the Reciprocal Cellular Equilibrium That Exists Between Lymphatic and Myeloid Tissues as Revealed by Experimental and Clinical Studies." Discussed by Drs. E. B. Krumbhaar, Philadelphia, and B. K. Wiseman, Columbus, Ohio.

Dr. Emil Novak, Baltimore, read a paper on "Sex Determination, Sex Differentiation and Intersexuality, with Report of Unusual Case." Discussed by Drs. Elias P. Lyon, Minneapolis; P. M. Menlowe, McKeesport, Pa.; Jacob Auslander, New York, and Emil Novak, Baltimore.

SECTION ON NERVOUS AND MENTAL DISEASES

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. H. Douglas Singer, Chicago.

On motion of Dr. Walter Freeman, Washington, D. C., unanimously carried, Dr. C. M. Hincks, New York, and Dr. E. A. Spiegel, Temple University Medical School, Philadelphia, were nominated for election to Associate Fellowship in the American Medical Association.

Drs. Walter Freeman, H. H. Schoenfeld and Claude Moore, Washington, D. C., presented a paper on "Ventriculography with Colloidal Thorium Dioxide." Discussed by Drs. Temple S. Fay, Philadelphia; R. Glen Spurling, Louisville, Ky.; Tracy J. Putnam, Boston; Hans Reese, Madison, Wis.; H. H. Schoenfeld, Washington, D. C.; Claude Moore, Washington, D. C., and Walter Freeman, Washington, D. C.

Drs. S. P. Goodhart, B. H. Balser and Irving Bieber, New York, presented a paper on "Encephalographic Studies in Extrapyramidal Disease." Discussed by Drs. A. J. Bendick, New York; Charles Davison, New York; Tracy J. Putnam, Boston, and S. P. Goodhart, New York.

Dr. Carlo J. Tripoli, New Orleans, read a paper on "Meningitis: A Comparative Study of Various Therapeutic Measures." Discussed by Drs. John H. Musser, New Orleans; Josephine B. Neal, New York; R. Glen Spurling, Louisville, Ky.; Peter Bassoe, Chicago; Alfred Gordon, Philadelphia, and Carlo J. Tripoli, New Orleans.

Dr. Tracy J. Putnam, Boston, read a paper on "Etiologic Factors in Multiple Sclerosis." Discussed by Drs. Armando Ferraro, New York; L. H. Cornwall, New York; Roy Grinker, Chicago, and Tracy J. Putnam, Boston.

Drs. William deG. Mahoney, New Haven, Conn., and Donal Sheehan, Manchester, England, presented a paper on "Experimental Ptosis in Monkeys and Chimpanzees: The Synergic Action of Third Nerve and Cervical Sympathetic." Discussed by Dr. R. Glen Spurling, Louisville, Ky.

Dr. J. A. Hannah, Toronto, read a paper entitled "Report of a Case of Alzheimer's Disease with Neuropathologic Observations." Discussed by Drs. R. P. MacKay, Chicago; Mary B. Baughman, Richmond, Va.; Peter Bassoe, Chicago; Hans Wassing, Paterson, N. J., and J. A. Hannah, Toronto.

Dr. George W. Hall, Chicago, read a paper on "Post-Traumatic Narcolepsy." Discussed by Drs. Henry W. Woltman, Rochester, Minn.; John B. Doyle, Los Angeles, and George W. Hall, Chicago.

THURSDAY, JUNE 13—AFTERNOON

Dr. H. Douglas Singer read the chairman's address, entitled "Research in Psychiatry."

Dr. Earl D. Bond, Philadelphia, read a paper on "The Onset in Postencephalitic and Traumatic Behavior Cases." Discussed by Drs. Bernard J. Alpers, Philadelphia; Bronson Crothers, Boston; James P. Leake, Washington, D. C., and Earl D. Bond, Philadelphia.

Drs. Lloyd H. Ziegler and Arthur Knudson, Albany, N. Y., presented a paper entitled "A Study of Activity After Recovery from Rickets: An Experimental Study." Discussed by Drs. Leo Kanner, Baltimore; Frederick F. Tisdall, Toronto; Le Roy M. A. Maeder, Philadelphia; Bronson Crothers, Boston, and Lloyd H. Ziegler, Albany, N. Y.

Dr. A. T. Mathers, Winnipeg, Manit., read the Canadian chairman's address, entitled "Medicolegal Relationships."

Dr. George B. Hassin, Chicago, Dr. Henry W. Woltman, Rochester, Minn., and Dr. H. Douglas Singer were appointed to act as a committee to nominate officers for the section for the ensuing year.

Dr. Walter Freeman, Washington, D. C., made the following report, as representative of the Section on the American Board of Psychiatry and Neurology:

"The American Board of Psychiatry and Neurology was finally organized after the session last year in Cleveland and held two or three meetings during the winter. The Section on Nervous and Mental Diseases is being represented by four members and the American Psychiatric Association and the American Neurological Association each by four members.

"During the winter, plans for the certification of specialists were made and the first examination was held June 7 and 8 in Philadelphia. At this time thirty-one candidates were examined. These men all graduated between the years of 1919 and 1929 and were therefore in group 2, which it was decided should be examined. Of those thirty-one candidates, twenty-one were passed, four were conditioned, and six failed.

"According to the by-laws of the board, those who are conditioned and those who fail may take subsequent examinations to make up their deficiences. If this is done within three years, a small fee is charged. If the delay is too long, the application for renewed examination is treated as an original application.

"The board plans to hold further examinations this year, one at Christmas time in New York, at the time of the meeting of the Association for Research in Nervous and Mental Diseases, and possibly another in some other city, either before or after that.

"In addition to the thirty-one candidates who were examined for the certificate of the board, about forty candidates for certification on the record were acted on at the meeting of the board held in Philadelphia. These men represented those who graduated up to and including 1919, and it was decided that in those individuals no examination was necessary."

Dr. Niels L. Anthonisen, Belmont, Mass., read a paper on "Depression as a Part of a Life Experience: A Study of Forty Consecutive Cases." Discussed by Drs. Earl D. Bond, Philadelphia; Lloyd H. Ziegler, Albany, N. Y., and Niels L. Anthonisen, Belmont, Mass.

Drs. Theophil Klingmann, Ann Arbor, Mich., and William H. Everts, New York, presented a paper on "The Intensive Treatment of Morphine Addiction." Discussed by Drs. Edwin G. Zabriskie, New York; Mieczyslaw Openchowski, Newark, N. J., and Theophil Klingmann, Ann Arbor, Mich.

Drs. C. C. Burlingame and Carl P. Wagner, Hartford, Conn., presented a paper on "The Psychiatric Hospital as an Institution of Learning." Discussed by Drs. Edwin G. Zabriskie, New York; Lloyd J. Thompson, New Haven Conn., and Carl P. Wagner, Hartford, Conn.

Dr. Tom B. Throckmorton, Des Moines, Iowa, delegate, made his report.

FRIDAY, JUNE 14—AFTERNOON

The following officers were elected: chairman, Dr. Hans Reese, Madison, Wis.; vice chairman, Dr. Percival Bailey, Chicago; secretary, Dr. Henry R. Viets, Boston; delegate, Dr. Tom B. Throckmorton, Des Moines, Iowa; alternate, Dr. Edward Delehanty, Denver.

Dr. George W. Hall, Chicago, was chosen as a member of the American Board of Psychiatry and Neurology.

Drs. Samuel Brock, Aaron Bell and Charles Davison, New York, presented a paper on "A Clinical Study of Seven Cases of Nervous Complications Following Spinal Anesthesia: Tissue Study in One Instance." Discussed by Drs. E. D. Friedman, New York; G. H. Hyslop, New York; C. C. Nash, Dallas, Texas, and Samuel Brock, New York.

Drs. Paul C. Bucy and Douglas N. Buchanan, Chicago, presented a paper on "The Simulation of Intracranial Neoplasm by Lead Encephalopathy in Children." Discussed by Drs. Tracy J. Putnam, Boston; Hans Reese, Madison, Wis.; Roy Grinker, Chicago; L. H. Loeser, Newark, N. J., and Paul C. Bucy, Chicago.

Drs. William Cone and Wilder Penfield, Montreal, presented a paper on "Subtemporal and Suboccipital Myoplastic Craniotomy." Discussed by Drs. Francis C. Grant, Philadelphia; W. James Gardner, Cleveland; Max M. Peet, Ann Arbor, Mich., and William Cone, Montreal.

Dr. Francis Grant, Philadelphia, read a paper on "Clinical Aspects and Treatment of Chronic Subdural Hemorrhage." Discussed by Dr. Tracy J. Putnam, Boston; W. James Gardner, Cleveland; Peter Bassoe, Chicago; Walter Freeman, Washington, D. C.; James W. Watts, Philadelphia; C. C. Nash, Dallas, Texas; A. M. Kraut, Jersey City, N. J.; Max M. Peet, Ann Arbor, Mich.; Edgar A. Kahn, Ann Arbor, Mich., and Francis C. Grant, Philadelphia.

Dr. T. C. Erickson, Montreal, read a paper on "Paroxysmal Neuralgia of the Tympanic Nerve (Jacobson's Nerve)." Discussed by Dr. Francis C. Grant, Philadelphia.

Dr. Chalmers H. Moore, Birmingham, Ala., read a paper on "Craniocerebral Trauma: Pathologic and Clinical Classification." Discussed by Dr. Francis C. Grant, Philadelphia.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Jeffrey C. Michael, Houston, Texas.

The chairman introduced Dr. J. F. Burgess and Dr. Paul Poirier, Montreal, chairman and secretary respectively of the Dermatological Section of the Canadian Medical Association. Dr. Burgess and Dr. Michael presided jointly during the meetings.

Dr. Howard Fox, New York, reported for the Committee on the International Dermatological Congress.

Dr. Jeffrey C. Michael, Houston, Texas, read the chairman's address, entitled "Consideration of the More Important Questions of the Etiology and Therapy of Acne Vulgaris."

Drs. A. M. Davidson and P. H. Gregory, Winnipeg, Manit., presented a paper on "The So-Called Mosaic Fungus as an Intercellular Deposit of Cholesterol Crystals." Discussed by Drs. John Godwin Downing, Boston; S. William Becker, Chicago; M. F. Engman Jr., St. Louis, and A. M. Davidson, Winnipeg, Manit.

Drs. Hermann Feit, Elizabeth Ann Laszlo and Frank Vero, New York, presented a paper on "Rosacea Interpreted as a Bacterid from Focal Infection." Discussed by Drs. Samuel Ayres Jr., Los Angeles; Myer Solis-Cohen, Philadelphia; John H. Stokes, Philadelphia, and Hermann Feit, New York.

Dr. D. E. H. Cleveland, Vancouver, B. C., read a paper on "Lichen Simplex Chronicus."

Drs. J. M. Van de Erve, Charleston, S. C., and S. William Becker, Chicago, presented a paper on "Functional Studies in Patients with the Neurodermatoses."

These two papers were discussed by Drs. Paul A. O'Leary, Rochester, Minn.; Samuel M. Peck, New York; John H. Stokes, Philadelphia. Samuel Goldblatt, Cincinnati; Theodore Cornbleet, Chicago; W. U. Rutledge, Louisville, Ky.; Eugene T. Bernstein, New York; D. E. H. Cleveland, Vancouver, B. C., and S. William Becker, Chicago.

Dr. John H. Stokes, Philadelphia, read a paper on "An 'Office' Technic of Treating Functional Neuroses as Complications of Organic Disease, with Special Reference to the Dermatoneuroses." Discussed by Drs. Earl D. Bond, Philadelphia; S. William Becker, Chicago; Elmore B. Tauber, Cincinnati, and John H. Stokes, Philadelphia.

Drs. Paul D. Foster, Los Angeles, and George M. MacKee, New York, presented a paper on "Histogenesis of Aberrant Lesions of Psoriasis." Discussed by Drs. Clark W. Finnerud, Chicago; Fred Wise, New York; Hermann Feit, New York; George C. Andrews, New York; David Bloom, New York; Adolph B. Loveman, Louisville, Ky.; Marion Z. Sulzberger, New York, and Paul D. Foster, Los Angeles.

THURSDAY, JUNE 13—AFTERNOON

Dr. Frank D. Weidman, Philadelphia, gave the report of the Scientific Exhibits Committee, stating that there was a balance of $233 on hand, and as the expenses would not be more than $50 or $60 per annum, this would be enough for three or four years, after which time the funds appropriated by the American

Medical Association would be sufficient to cover expenses. Dr. Weidman tendered his resignation as chairman of the Scientific Exhibit.

The chairman appointed an auditing committee consisting of Dr. Howard Morrow, San Francisco, and Dr. Otto H. Foerster, Milwaukee, to audit the accounts of the chairman of the Scientific Exhibit.

Dr. C. Guy Lane, Boston, read the report of the American Board of Dermatology and Syphilology.

Dr. J. F. Burgess, Montreal, read the Canadian chairman's address, entitled "Chronic Glanders in Man."

Dr. Frank R. Smith Jr., Baltimore, read a paper on "The Treatment of Early and Late Congenital Syphilis in Children: The Results of Treatment in 521 Cases." Discussed by Drs. E. J. Trow, Toronto; Adolph Rostenberg, New York, and Frank R. Smith Jr., Baltimore.

Drs. Duncan O. Poth, Burton F. Barney and Udo J. Wile, Ann Arbor, Mich., presented a paper on "A Study of Dementia Paralytica and Tabes with Reference to Precocious Development." Discussed by Drs. A. Benson Cannon, New York; Udo J. Wile, Ann Arbor, Mich.; S. B. Hadden, Philadelphia, and Duncan O. Poth, Ann Arbor, Mich.

Dr. Walter M. Simpson, Dayton, Ohio, read a paper on "Artificial Fever Therapy of Syphilis." Discussed by Drs. Frank R. Menagh, Detroit; Clarence A. Neymann, Chicago; Albert N. B. Lemoine, Kansas City, Mo.; M. F. Engman Jr., St. Louis; John H. Stokes, Philadelphia; Paul A. O'Leary, Rochester, Minn., and Walter M. Simpson, Dayton, Ohio.

Drs. A. Benson Cannon and Joycelin H. Robertson, New York, presented a paper on "A Study of the Comparative Value of Bismuth and Mercury Compounds in the Treatment of Early Syphilis." Discussed by Drs. Harold N. Cole, Cleveland, and Samuel Goldblatt, Cincinnati.

Drs. Harold N. Cole and E. A. Levin, Cleveland, presented a paper on "Intradermal Test for Chancroids with Sterilized Pus from Chancroidal Buboes." Discussed by Drs. Eugene F. Traub, New York; David Bloom, New York; James L. Pipkin, San Antonio, Texas, and Harold N. Cole, Cleveland.

Dr. John F. Madden, St. Paul, read a paper on "The Balanitides." Discussed by Drs. P. H. Poirier, Montreal; Joseph V. Klauder, Philadelphia; Samuel Ayres Jr., Los Angeles, and John F. Madden, St. Paul.

FRIDAY, JUNE 14—AFTERNOON

The report of the auditing committee, which found the accounts correct, was received.

Dr. Marion B. Sulzberger, New York, offered the following motion: That the chairman of this section appoint a committee on which he is to act ex officio, this committee to consist of members of this section to study and report on the ways and means by which American dermatology can most effectively organize in the study and treatment of occupational dermatoses, and how this section can best cooperate with the Section on Industrial and Preventive Medicine and Public Health and with the United States Public Health Service in the formation of a central institute for the cooperative approach to the problems of industrial skin diseases. The motion was seconded and carried, and the chairman announced that the incoming chairman would appoint the committee.

The following officers were elected: chairman, Dr. Harry R. Foerster, Milwaukee; vice chairman, Dr. John Godwin Downing, Boston; secretary, Dr. Jesse Bedford Shelmire, Dallas, Texas; chairman, Scientific Exhibit Committee, Dr. Clark W. Finnerud, Chicago; executive committee: Dr. C. Guy Lane, Boston; Dr. Jeffrey C. Michael, Houston, Texas, and Dr. Harry R. Foerster, Milwaukee.

Dr. M. F. Engman Jr., St. Louis, read a paper on "Congenital Atrophy of the Skin with Reticular Pigmentation." Discussed by Drs. H. A. Dixon, Toronto; S. William Becker, Chicago; Harold N. Cole, Cleveland; Fred D. Weidman, Philadelphia; Charles F. Pabst, Brooklyn, and M. F. Engman Jr., St. Louis.

Dr. Joseph V. Klauder, Philadelphia, read a paper on "Fever Therapy of Mycosis Fungoides." Discussed by Drs. W. R. Jaffrey, Hamilton, Ont.; Paul A. O'Leary, Rochester, Minn.; Edward F. Corson, Philadelphia; C. Guy Lane, Boston, and Joseph V. Klauder, Philadelphia.

Drs. J. L. Pipkin and C. F. Lehmann, San Antonio, Texas, presented a paper on "Coccidioidal Granuloma: Report of Two Cases of a Chronic Hypertrophic Type." Discussed by Drs. Charles C. Tomlinson, Omaha; Howard Morrow, San Francisco; Fred D. Weidman, Philadelphia; Donald M. Pillsbury, Philadelphia; Joseph Gardner Hopkins, New York, and J. L. Pipkin, San Antonio, Texas.

Dr. Norman M. Wrong, Toronto, read a paper on "Hodgkin's Disease of the Scalp." Discussed by Dr. Richard W. Fowlkes, Richmond, Va.

Drs. George C. Andrews and Carl B. Braestrup, New York, presented a paper on "Depth Dose Measurements for Dermatologic Roentgen Therapy." Discussed by Drs. Anthony C. Cipollaro, New York, and Carl B. Braestrup, New York.

Drs. M. H. Goodman and Lloyd W. Ketron, Baltimore, presented a paper on "Granuloma Annulare: Report of Unusual Cases, with Remarks on the Histology of This Condition." Discussed by Drs. G. S. Williamson, Ottawa, Ont.; Arthur W. Stillians, Chicago; Jeffrey C. Michael, Houston, Texas, and Lloyd W. Ketron, Baltimore.

Drs. Walter O. Teichman and Frank J. Eichenlaub, Washington, D. C., presented a paper on "The Relation of the Endocrine System to Dermatology." Discussed by Drs. Barney Usher, Montreal; Hermann Feit, New York, and Frank J. Eichenlaub, Washington, D. C.

Dr. Harold N. Cole, Cleveland, moved and Dr. Howard Morrow, San Francisco, seconded the motion, that it be the sense of the section that the motion passed at a previous meeting in regard to participants remaining throughout the session be strictly enforced in the future. As to the means of enforcement, it was suggested by Dr. Eichenlaub that if a man did not remain through the session he be not invited to participate in the program again. Dr. Cole's motion was seconded and carried.

The chairman, Dr. Michael, expressed to the Canadian delegates the appreciation of the section for their part in making the meeting successful.

The chairman expressed the appreciation of the section for the work of Dr. Fred D. Weidman as chairman of the Committee on Scientific Exhibit.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Robert H. Riley, Baltimore.

The chairman appointed the following as the nominating committee: Dr. A. J. Chesley, St. Paul; Dr. J. N. Baker, Montgomery, Ala., and Dr. A. J. Lanza, New York.

On motion of Dr. John Sundwall, Ann Arbor, Mich., seconded by Dr. W. W. Peter, Albuquerque, N. M., it was voted to nominate Dr. Victor G. Heiser, New York, and Dr. Stuart Fordyce Kitchen, Tallahassee, Fla., for Associate Fellowship.

Dr. Robert H. Riley, Baltimore, read the chairman's address.

Dr. A. Grant Fleming, Montreal, in the absence of Dr. W. J. P. MacMillan, Charlottetown, P. E. I., read the Canadian chairman's address.

Dr. Albert S. Gray, Hartford, Conn., read a paper on "Importance of Industrial Hygiene and How It Can Best Be Handled by State Departments of Health." Discussed by Drs. C. O. Sappington, Chicago; R. R. Sayers, Washington, D. C.; Huntington Williams, Baltimore; L. D. Bristol, New York, and Albert S. Gray, Hartford, Conn.

Dr. Fred J. Wampler, Richmond, Va., read a paper on "Some Observations on a Physical Survey of 47,000 CWA Employees in the State of Virginia." Discussed by Drs. L. D. Bristol, New York; I. C. Riggin, Richmond, Va.; John Sundwall, Ann Arbor, Mich.; W. W. Peter, Albuquerque, N. M.; Oscar O. Miller, Louisville, Ky.; Fred J. Wampler, Richmond, Va., and R. R. Sayers, Washington, D. C.

THURSDAY, JUNE 13—MORNING

Dr. N. E. McKinnon, Downsview, Ont., read a paper on "The Reduction of Diphtheria in Children Immunized with Toxoid." Discussed by Drs. M. P. Ravenel, Columbia, Mo.;

D. T. Fraser, Toronto; J. N. Baker, Montgomery, Ala., and N. E. McKinnon, Downsview, Ont.

Dr. James G. Cumming, Washington, D. C., read a paper on "Tuberculosis: The Interval of Supervisory Treatment and Prophylactic Control." Discussed by Dr. S. Adolphus Knopf, New York.

Dr. John L. Rice, New York, read a paper on "Health Problems in New York City."

Dr. S. E. Gould, Eloise, Mich., read a paper on "Age Distribution and Longevity of the Syphilitic."

Dr. Julius Levy, Newark, N. J., read a paper on "Child Health Survey of Preschool Children, Conducted as CWA Project." Discussed by Dr. LeRoy A. Wilkes, Trenton, N. J.

Drs. Clarence L. Hyde and Carl R. Steinke, Akron, Ohio, presented a paper on "The Importance of the Closure of Pulmonary Cavities in the Prevention of Tuberculosis."

Dr. W. T. B. Mitchell, Montreal, read a paper on "Mental Hygiene in Its Relationship to Public Health and Preventive Medicine."

Louis I. Dublin, New York, read a paper on "Trends of Cancer: Incidence, Mortality and Curability."

Dr. A. J. Lanza, New York, read a paper on "Asbestosis."

Dr. R. Vance Ward, Montreal, read a paper on "Tuberculosis in Industry."

FRIDAY, JUNE 14—MORNING

Drs. Howard B. Sprague and Paul D. White, Boston, presented a paper on "The Etiology of Heart Disease, with Special Reference to the Present Status of the Prevention of Heart Disease."

Dr. George E. Fahr, Minneapolis, read a paper on "The Heart in Hypertension."

Dr. Alfred C. Cohn, New York, read a paper on "An Analysis of the Apparent Increase in Heart Disease."

Dr. William D. Stroud, Philadelphia, read a paper on "The Rehabilitation and Placement in Industry of Those Handicapped with Cardiovascular Disease."

Dr. O. F. Hedley, Philadelphia, read a paper on "A Critical Analysis of Heart Disease Mortality."

These five papers were discussed by Drs. Haven Emerson, New York; Harold E. B. Pardee, New York; Timothy Leary, Boston; S. Adolphus Knopf, New York; Samuel Friedman, New York; Harold B. Wood, Harrisburg, Pa.; Howard B. Sprague, Boston; George E. Fahr, Minneapolis, and O. F. Hedley, Philadelphia.

The following officers were elected: chairman, Dr. R. R. Sayers, Washington, D. C.; vice chairman, Dr. J. Lynn Mahaffey, Trenton, N. J.; secretary, Dr. Henry Hanson, Jacksonville, Fla.; delegate, Dr. Stanley H. Osborn, Hartford, Conn.; Executive Committee, Dr. Wilson G. Smillie, Boston, Dr. Robert H. Riley, Baltimore, and Dr. R. R. Sayers, Washington, D. C.

SECTION ON UROLOGY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. Stanley R. Woodruff, Jersey City, N. J.

The following papers were read as a symposium on "Genito-Urinary Anomalies and Their Treatment":

Dr. Robert Gutierrez, New York: "The Rôle of Anomalies of the Kidney and Ureter in the Causation of Surgical Conditions."

Dr. Allen B. Hawthorne, Montreal: "The Embryologic and Clinical Aspects of Double Ureter."

Dr. Gilbert J. Thomas, Minneapolis: "The Ectopic Pelvic Kidney."

Dr. Meredith F. Campbell, New York: "The Surgical Treatment of Anomalies of the Upper Urinary Tract in Children."

These four papers were discussed by Drs. Vincent J. O'Conor, Chicago; William P. Herbst, Washington, D. C.; Moses Swick, New York; Louis H. Segar, Indianapolis; Reed M. Nesbit, Ann Arbor, Mich.; C. H. de T. Shivers, Atlantic City, N. J.; George R. Livermore, Memphis, Tenn.; John K. Ormond, Detroit; Robert Gutierrez, New York; Allen B. Hawthorne, Montreal; Gilbert J. Thomas, Minneapolis, and Meredith F. Campbell, New York.

Drs. Charles M. McKenna and E. E. Ewert, Chicago, presented a paper on "The Operative Treatment for Undescended Testicle." Discussed by Drs. R. H. Jenkins, New Haven, Conn.; A. I. Dodson, Richmond, Va.; H. W. E. Walther, New Orleans, and Charles M. McKenna, Chicago.

Dr. William E. Stevens, San Francisco, read a paper on "Congenital Obstructions of the Female Urethra." Discussed by Dr. Francis P. Twinem, New York.

Dr. Frank S. Patch, Montreal, read a paper on "Cystitis Cystica." Discussed by Drs. Monroe E. Greenberger, New York; George H. Ewell, Madison, Wis.; and Frank S. Patch, Montreal.

Dr. Clyde W. Collings, New York, presented a new instrument for transurethral surgery.

THURSDAY, JUNE 13—MORNING

Drs. David W. MacKenzie, Montreal, and Stanley R. Woodruff, Jersey City, N. J., presided as co-chairmen.

Dr. David W. MacKenzie, Montreal, read the Canadian chairman's address, entitled "Experimental Studies of Lymphatic Absorption from the Pelvic Organs, with Special Reference to the Question of Renal Infections."

Drs. Lloyd G. Lewis and Orthello R. Langworthy, Baltimore, presented a paper on "New Methods of Diagnosis in Neurogenic Lesions of the Bladder and Vesical Neck." Discussed by Drs. John Duff, New York; Maurice Muschat, Philadelphia; Irving Simons, New York; William Bisher, New York, and Lloyd G. Lewis, Baltimore.

On motion made by Dr. George R. Livermore, Memphis, Tenn., and regularly seconded and carried, the section went into executive session during the reading of the following three papers:

Drs. James F. McCahey, Lorenz P. Hansen and David Soloway, Philadelphia: "The Anterior Pituitary-Testis Endocrine Relation in the Human Being."

Dr. William E. Lower, Cleveland: "A Preliminary Clinical Report on the Treatment of Benign Prostatic Hypertrophy by Nonoperative Methods."

These two papers were discussed by Drs. William J. Ezickson, Philadelphia; Richard Chute, Boston; R. J. A. McComb, Toronto; R. H. Jenkins, New Haven, Conn.; V. D. Lespinasse, Chicago; D. Roy McCullagh, Cleveland; James F. McCahey, Philadelphia, and William E. Lower, Cleveland.

Dr. O. S. Lowsley, New York: "Experimental Studies on Impotence in Man." Discussed by Dr. A. L. Wolbarst, New York.

Drs. S. W. Moore and Roy B. Henline, New York, presented a paper on "Experimental Study in Renal Arteriography."

Dr. Dorrin F. Rudnick, Chicago, read a paper on "A Study of the Changes in the Trigon Following Resection."

These two papers were discussed by Drs. A. J. Scholl, Los Angeles, and R. W. Barnes, Los Angeles.

Dr. John B. Lownes, Philadelphia, read a paper on "The Indication for Nephropexy, with an Analysis of Results." Discussed by Dr. Joseph A. Hyams, New York.

The chairman appointed Drs. Russell S. Ferguson, New York, and Vincent J. O'Conor, Chicago, temporary members of the executive committee in the absence of Drs. N. G. Alcock, Iowa City, and Harry Culver, Chicago.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. J. H. Morrissey, New York; vice chairman, Dr. C. H. de T. Shivers, Atlantic City, N. J.; secretary, Dr. W. P. Herbst, Washington, D. C.; delegate, Dr. H. C. Bumpus Jr., Pasadena, Calif.; alternate, Dr. John B. Lownes, Philadelphia.

Dr. Stanley R. Woodruff, Jersey City, N. J., read the chairman's address, entitled "Tumors of the Ureter: A Consideration of the Various Types, Primary and Secondary, with a Report of Two Cases of True Metastases." Discussed by Dr. Howard S. Jeck, New York; A. E. Bothe, Philadelphia; F. C. Herrick, Cleveland, and Stanley R. Woodruff, Jersey City, N. J.

Dr. William F. Braasch, Rochester, Minn., read a paper on "The Prognosis with Renal Neoplasm and Clinical Data Affecting It." Discussed by Dr. H. W. E. Walther, New Orleans; William C. Quinby, Boston; Edwin Beer, New York, and William F. Braasch, Rochester, Minn.

Dr. Robin Pearse, Toronto, read a paper on "Choice of Treatment in Carcinoma of the Bladder."

Dr. Russell S. Ferguson, New York, read a paper on "Etiology and Pathogenesis of Multiple Tumors of the Genito-Urinary Tract."

These two papers were discussed by Drs. N. F. Ockerblad, Kansas City, Mo.; F. G. Harrison, Philadelphia; A. E. Bothe, Philadelphia; George E. Pfahler, Philadelphia, and Victor D. Washburn, Wilmington, Del.

Dr. Reed M. Nesbit, Ann Arbor, Mich., read a paper on "Total Cystectomy and Urethral Transplantations in Malignant Conditions of the Bladder, with a Description of a New Operative Procedure." Discussed by Drs. Edwin Beer, New York; Jerome M. Lynch, New York; C. C. Higgins, Cleveland; Harry O. Lepsky, Cincinnati, and William C. Quinby, Boston.

Dr. Ralph M. LeComte, Washington, D. C., read a paper on "The Management of Tumors of the Kidney, Including Cysts and Polycystic Disease."

Dr. Ernest M. Watson, Buffalo, read a paper on "Carcinoma of the Female Urethra."

Dr. Archie L. Dean Jr., New York, read a paper on "Teratoid Tumors of the Testes."

These three papers were discussed by Drs. Lawrence R. Wharton, Baltimore; Henry Sangree, Philadelphia; George C. Prather, Boston; Benjamin S. Barringer, New York; Ralph M. LeComte, Washington, D. C., and Ernest M. Watson, Buffalo.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9:10 by the chairman, Dr. Robert D. Schrock, Omaha.

The chairman introduced Dr. R. I. Harris, Toronto, who presided jointly.

Dr. G. E. Haggart, Boston, read a paper on "Comminuted Colles' Fracture in Elderly Patients: Method of Treatment and the End Results in Thirty Cases." Discussed by Drs. William B. Owen, Louisville, Ky.; Willis C. Campbell, Memphis, Tenn.; Robert H. Kennedy, New York, and Roland Hammond, Providence, R. I.

Drs. Walter G. Stern and Louis E. Papurt, Cleveland, presented a paper on "Healing of the Newer Bumper Fractures of the Tibia." Discussed by Drs. W. E. Gallie, Toronto; Paul B. Magnuson, Chicago, and H. Earle Conwell, Fairfield, Ala.

Drs. John C. Wilson and Pierre J. Walker, Los Angeles, presented a paper on "Acute Anterior Poliomyelitis: A Study of the 1934 Epidemic in Southern California." Discussed by Drs. William H. Park, New York; Philip Lewin, Chicago; J. P. Leake, Washington, D. C.; Maurice Brodie, New York, and John C. Wilson, Los Angeles.

Dr. Henry W. Meyerding, Rochester, Minn., read a paper on "Dupuytren's Contracture." Discussed by Drs. Sumner L. Koch, Chicago; G. O. Eaton, Baltimore, and A. Bruce Gill, Philadelphia.

Dr. Armitage Whitman, New York, read a paper on "The Treatment of Scoliosis: End Results in the Study of One Hundred Postoperative Cases." Discussed by Drs. A. B. Ferguson, New York, and Mather Cleveland, New York.

Dr. Clarence H. Heyman, Cleveland, read a paper on "Late Results of Treatment of Congenital Dislocation of the Hip." Discussed by Drs. A. Bruce Gill, Philadelphia; Samuel Kleinberg, New York; Joseph A. Freiberg, Cincinnati, and Paul C. Colonna, New York.

THURSDAY, JUNE 13—MORNING

Dr. J. M. Murray, Ottawa, Ont., read a paper on "Traumatic Flail Elbow." Discussed by Drs. Edwin W. Ryerson, Chicago; G. I. Bauman, Cleveland, and J. M. Murray, Ottawa, Ont.

Dr. George W. Armstrong, Ottawa, Ont., read a paper on "Acute Septic Arthritis." Discussed by Drs. Robert W. Johnson Jr., Baltimore; G. A. Ramsay, London, Ont.; Mr. Harry Clarke, Royal Infirmary, Manchester, England; R. I. Harris, Toronto; Willis C. Campbell, Memphis, Tenn.; Frank R. Ober, Boston, and George W. Armstrong, Ottawa, Ont.

Dr. R. I. Harris, Toronto, read the Canadian chairman's address, entitled "Fat Embolism: A Dangerous Complication of Orthopedic Operations."

Dr. Fremont A. Chandler, Chicago, secretary, discussed the formation of the Board of Orthopedic Surgery.

Dr. E. C. Janes, Hamilton, Ont., read a paper on "Experiences in Leg Lengthening." Discussed by Drs. Paul N. Jepson, Philadelphia; James A. Dickson, Cleveland; Paul B. Magnuson, Chicago; George Anopol, New York, and E. C. Janes, Hamilton, Ont.

Dr. D. W. Gordon Murray, Toronto, read a paper on "Fractures of the Carpal Scaphoid." Discussed by Dr. Clay Ray Murray, New York.

Dr. Fraser B. Gurd, Montreal, read a paper on "Post-Traumatic Acute Bone Atrophy: A Clinical Entity." Discussed by Drs. E. W. Ryerson, Chicago; Robert V. Funsten, University, Va.; Ralph G. Carothers, Cincinnati; Philip Lewin, Chicago, and Fraser B. Gurd, Montreal.

FRIDAY, JUNE 14—MORNING

The following officers were elected: chairman, Dr. Arthur T. Legg, Boston; vice chairman, Dr. Fremont A. Chandler, Chicago; secretary, Dr. Robert V. Funsten, University, Va.; delegate, Henry W. Meyerding, Rochester, Minn.; executive committee: Drs. James S. Speed, Memphis, Tenn.; Robert D. Schrock, Omaha, and Arthur T. Legg, Boston.

Dr. Henry W. Meyerding, Rochester, Minn., presented the report of the delegate to the House of Delegates.

Dr. Earl D. McBride, Oklahoma City, read a paper on "The Conservative Operation for Bunions: End Results and Refinements of Technic." Discussed by Drs. Paul W. Lapidus, New York, and Earl D. McBride, Oklahoma City.

Dr. Willis C. Campbell, Memphis, Tenn., read a paper on "An Analysis of Living Cases of Primary Malignant Bone Tumors." Discussed by Drs. Henry W. Meyerding, Rochester, Minn.; Bradley L. Coley, New York, and Dr. Willis C. Campbell, Memphis, Tenn.

Dr. R. I. Harris, Toronto, extended the thanks of the members of the Canadian Medical Association for the kind and courteous treatment they had received and invited the section and the American Medical Association to meet in Toronto in 1940, when the Canadian Medical Association is meeting jointly with the British Medical Association.

Dr. Robert D. Schrock, Omaha, read the chairman's address, entitled "Difficulties of Diagnosis of Bone Tumors."

Dr. William T. Green, Boston, read a paper on "Osteomyelitis in Infancy." Discussed by Drs. Frank R. Ober, Boston; H. Winnett Orr, Lincoln, Neb., and William T. Green, Boston.

Dr. Edward L. Compere, Chicago, read a paper on "Growth Arrest in the Long Bones as a Result of Fractures That Include the Epiphysis."

Dr. R. A. Y. Johnston, London, Ont., read a paper on "The Effect of Inflammation on Epiphysis and Slipped Epiphyses."

These two papers were discussed by Drs. F. C. Kidner, Detroit; J. Dewey Bisgard, Omaha; Dr. Edward L. Compere, Chicago, and Dr. R. A. Y. Johnston, London, Ont.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Walter A. Fansler, Minneapolis.

Drs. N. B. Taylor and C. B. Weld, Toronto, presented a paper on "Intestinal Obstruction: An Experimental Study." Discussed by Drs. A. C. Ivy, Chicago, and C. B. Weld, Toronto.

Dr. N. B. Dreyer, Halifax, N. S., read a paper on "Some Effects of Barbituric Acid Derivatives on Gastro-Intestinal Motility and Absorption in the Cat." Discussed by Drs. J. A. Bargen, Rochester, Minn.; W. J. Quigley, Cleveland, and N. B. Dreyer, Halifax, N. S.

Drs. Martin G. Vorhaus, Robert R. Williams and Robert E. Waterman, New York, presented a paper on "Studies on Crystalline Vitamin B_1: Experimental and Clinical Observations." Discussed by Drs. Frederick F. Tisdale, Toronto, and Martin G. Vorhaus, New York City.

Dr. Russell L. Haden, Cleveland, read a paper on "Multiple Nutritional Deficiency Disease." Discussed by Drs. R. F.

Farquaharson, Toronto; Michael G. Wohl, Philadelphia, and Russell L. Haden, Cleveland.

Drs. Burrill B. Crohn and Bernard D. Rosenak, New York, presented a paper on "Combined Forms of Ileitis and Colitis." Discussed by Drs. A. A. Berg, New York; Joseph Felsen, Mount Vernon, N. Y.; Anthony Bassler, New York, and Burrill B. Crohn, New York.

Drs. Lathan A. Crandall, George M. Roberts and Lowell D. Snorf, Chicago, presented a paper on "The Use of Chondroitin in Idiopathic Headache." Discussed by Drs. August A. Thomen, New York; A. F. R. Andresen, Brooklyn, and Lathan A. Crandall, Chicago.

Dr. Walter A. Bastedo, New York, read a paper on "The Value of Belladonna in Stomach Disorders: A Summary of Laboratory and Clinical Observations." Discussed by Drs. Bruce C. Lockwood, Detroit, and Walter A. Bastedo, New York.

THURSDAY, JUNE 13—AFTERNOON

Dr. Walter A. Fansler, Minneapolis, read the chairman's address, entitled "The Diagnosis and Prognosis of Epithelial Tumors of the Large Bowel."

Dr. R. H. M. Hardisty, Montreal, read the Canadian chairman's address.

Dr. Curtice Rosser, Dallas, Texas, read a paper on "Diagnostic Criteria of Colonic Cancer." Discussed by Drs. Neil John Maclean, Winnipeg, Manit.; Sara M. Jordan, Boston; Julius Friedenwald, Baltimore, and Curtice Rosser, Dallas, Texas.

Dr. Neil John Maclean, Winnipeg, Manit., read a paper on "Endometriosis of the Large Bowel." Discussed by Drs. James D. Schofield, Philadelphia, and Neil John Maclean, Winnipeg, Manit.

Drs. E. L. Walsh, G. H. Laing, H. L. Sippy and A. C. Ivy, Chicago, presented a paper on "Behavior of the Average Human Colon." Discussed by Drs. Malcolm J. Wilson, Toronto; N. B. Dreyer, Halifax, N. S., and A. C. Ivy, Chicago.

Dr. Philip W. Brown, Rochester, Minn., read a paper on "Clinical Experience of the Mayo Clinic in the Treatment of Amebiasis." Discussed by Drs. Moses Paulson, Baltimore; Sidney K. Simon, New Orleans, and Philip W. Brown, Rochester, Minn.

Drs. Herbert T. Hayes, Harry B. Burr and J. Wade Harris, Houston, Texas, presented a paper on "Lymphogranuloma Inguinale." Discussed by Drs. William H. Daniel, Los Angeles, and Harry B. Burr, Houston, Texas.

Dr. Frank C. Yeomans, New York, read a paper on "Proctologic Conditions in Children." Discussed by Drs. Descum C. McKenney, Buffalo, and Frank C. Yeomans, New York.

Dr. F. B. Bowman, Hamilton, Ont., read a paper on "Villous Papilloma of the Rectum." Discussed by Drs. Edward G. Martin, Detroit, and F. B. Bowman, Hamilton, Ont.

FRIDAY, JUNE 14—AFTERNOON

The following officers were elected: chairman, Dr. Ernest H. Gaither, Baltimore; vice chairman, Dr. Louis A. Buie, Rochester, Minn.; secretary, Dr. A. H. Aaron, Buffalo; delegate, Dr. Curtice Rosser, Dallas, Texas; Executive Committee, Dr. A. F. R. Andresen, Brooklyn; Dr. Walter A. Fansler, Minneapolis, and Dr. Ernest H. Gaither, Baltimore.

Dr. Martin E. Rehfuss, Philadelphia, read the report of the Committee on Dietary Faddism. On motion made by Dr. Walter A. Fansler, Minneapolis, seconded by Dr. Anthony Bassler, New York, the following resolution was adopted:

Resolved, That the Committee on Dietary Faddism be given the power to combat actively dietary faddism, food cults, and dietary misinformation, by every means in its power, subject to the discretion of the Board of Trustees of the American Medical Association.

Dr. A. F. R. Andresen, Brooklyn, presented the report of the committee appointed to join with a similar committee of the American Gastro-Enterological Association in the formation of an American Board of Gastroenterology. On motion made by Dr. Henry A. Rafsky, New York, seconded by Dr. Sara M. Jordan, Boston, the report was accepted and approved.

Dr. Malcolm J. Wilson, Toronto, read a paper on "The Function of the Pyloric Sphincter." Discussed by Drs. J. Earl Thomas, Philadelphia, and Malcolm J. Wilson, Toronto.

Drs. Charles M. Wilhelmj and Frederick C. Hill, Omaha, presented a paper on "The Regulation of Gastric Acidity." Discussed by Drs. F. W. Rolph, Toronto; Frank Gorham, St. Louis, and Frederick C. Hill, Omaha.

Drs. Samuel J. Fogelson and Richmond K. Anderson, Chicago, presented a paper on "The Secretion of Gastric Mucin in Man: A Comparative Study in the Normal Subject and Peptic Ulcer Patient in Response to an Alcohol Test Meal." Discussed by Drs. B. P. Babkin, Montreal, and Samuel J. Fogelson, Chicago.

Drs. John Eiman and Walter G. Karr, Philadelphia, presented a paper on "Relation of Nonprotein Nitrogen Retention to Dehydration and Hypochloremia." Discussed by Drs. Simon L. Ruskin, New York; Henry A. Rafsky, New York; Michael G. Wohl, Philadelphia, and Walter G. Karr, Philadelphia.

Dr. B. P. Babkin, Montreal, read a paper on "Blood Sugar Concentration and the External Secretion of the Pancreatic Gland." Discussed by Drs. A. H. Aaron, Buffalo, and B. P. Babkin, Montreal.

Dr. Joseph T. Beardwood Jr., Philadelphia, read a paper on "Abdominal Symptomatology of Diabetic Acidosis."

Drs. Robert W. Mathews and Truman G. Schnabel, Philadelphia, presented a paper on "Esophageal Carcinoma, with Especial Reference to a Nonstenosing Variety." Discussed by Drs. Gabriel Tucker, Philadelphia, and Truman G. Schnabel, Philadelphia.

Drs. James F. Weir and Albert M. Snell, Rochester, Minn., presented a paper on "Some Sequelae of Cholecystectomy." Discussed by Drs. Colin G. Sutherland, Montreal, and Henry A. Rafsky, New York.

SECTION ON RADIOLOGY

WEDNESDAY, JUNE 12—AFTERNOON

The meeting was called to order at 2:10 by the chairman, Dr. John W. Pierson, Baltimore.

The chairman introduced Dr. W. A. Jones, Kingston, Ont., the Canadian chairman, who assumed the chair.

Dr. W. A. Jones, Kingston, Ont., read the Canadian chairman's address, entitled "The Rôle of Anatomy in the Radiologic Study of the Spine."

Dr. Albert Soiland, Los Angeles, presented his report on the resolutions adopted by the section last year, which were presented to the House of Delegates, and Dr. C. S. Gorsline, Battle Creek, Mich., discussed the matter briefly.

Drs. B. R. Kirklin and T. W. Blake, Rochester, Minn., presented a paper on "A Comparison of the Clinical and Cholecystographic Manifestations of Cholecystic Disease." Discussed by Dr. I. S. Ravdin, Philadelphia.

Dr. A. C. Singleton, Toronto, read a paper on "Radiologic Observations in Prepyloric Lesions." Discussed by Dr. Lewis Gregory Cole, New York.

Dr. Sherwood Moore, St. Louis, read a paper on "Metabolic Craniopathy: A Clinical Syndrome with Radiographic Lesions in the Cranial Bones." Discussed by Drs. Bede J. M. Harrison, Vancouver, B. C.; M. C. Sosman, Boston, and E. H. Skinner, Kansas City, Mo.

Drs. Karl Kornblum and Philip J. Hodes, Philadelphia, presented a paper on "The Roentgenologic Aspects of Osteomyelitis of the Skull." Discussed by Dr. E. L. Rypins, Iowa City.

Dr. E. H. Shannon, Toronto, read a paper on "Observations on the Radiographic Examination of the Accessory Nasal Sinuses." Discussed by Dr. Frederick M. Law, New York.

THURSDAY, JUNE 13—AFTERNOON

Dr. John W. Pierson, Baltimore, read the chairman's address, entitled "Some Roentgenologic Studies in the Dynamics of the Thorax."

Dr. John T. Farrell Jr., Philadelphia, presented a paper on "Importance of Early Diagnosis in Bronchiectasis: A Clinical and Roentgenographic Study of One Hundred Cases." No discussion.

Dr. Robert E. Cumming, Detroit, read a paper on "Intravenous and Retrograde Urography: A Comparative Study." Discussed by Drs. Moses Swick, New York, and Robert E. Cumming, Detroit.

Dr. A. H. Pirie, Montreal, read a paper on "Clinical Applications of the Method for Reading with Closed Eyes." Discussed by Drs. Robert B. Taft, Charleston, S. C.; George W. Grier, Pittsburgh, and A. H. Pirie, Montreal.

Drs. Max Ritvo, Patrick F. Butler and Eugene E. O'Neil, Boston, presented a paper on "X-Ray Diagnosis of Tumors of the Breast." Discussed by Drs. L. A. Pomeroy, Cleveland; John J. Gilbride, Philadelphia, and Max Ritvo, Boston.

Dr. E. E. Shepley, Saskatoon, Sask., read a paper on "Cancer: An Adequate Offensive Attack." Discussed by Drs. Francis Carter Wood, New York.

FRIDAY, JUNE 14—AFTERNOON

The following officers were elected: chairman, Dr. Edward Jenkinson, Chicago; vice chairman, Dr. Ross Golden, New York; secretary, Dr. John T. Murphy, Toledo, Ohio; executive committee, Dr. A. U. Desjardins, Rochester, Minn.; Dr. John W. Pierson, Baltimore, and Dr. Edward Jenkinson, Chicago.

Drs. Howard P. Doub and Frank W. Hartman, Detroit, presented a paper on "X-Rays in Diagnosis and Treatment of Myelogenous Neoplasms." No discussion.

Dr. Bede J. M. Harrison, Vancouver, B. C., read a paper on "A New Method of Orientation Applicable to the Body and the Roentgen-Ray Beam." Discussed by Drs. W. E. Chamberlain, Philadelphia; A. H. Pirie, Montreal, and Bede J. M. Harrison, Vancouver, B. C.

Dr. Benjamin S. Barringer, New York, read a paper on "Inguinal Gland Metastases in Carcinoma of the Penis." Discussed by Drs. George E. Pfahler, Philadelphia, and Benjamin S. Barringer, New York.

Dr. U. V. Portmann, Cleveland, read a paper on "Roentgen Therapy for Mediastinal Tuberculous Lymphadenitis." Discussed by Drs. John S. Derr, Frederick, Md.; William Snow, New York, and U. V. Portmann, Cleveland.

Dr. M. C. Morrison, London, Ont., read a paper on "Hodgkin's Disease of Bone." Discussed by Drs. W. H. McGuffin, Calgary, Alta.; A. H. Pirie, Montreal; W. E. Chamberlain, Philadelphia; U. V. Portmann, Cleveland; M. J. Tobias, New York; Gordon Richards, Toronto; George E. Pfahler, Philadelphia, and M. C. Morrison, London, Ont.

Drs. G. Allen Robinson and R. Franklin Carter, New York, presented a paper on "Differential Diagnosis and Treatment of Tumors in Children." Discussed by Drs. Ralph S. Bromer, Bryn Mawr, Pa.; George W. Grier, Pittsburgh; Eugene P. Pendergrass, Philadelphia; George E. Pfahler, Philadelphia, and A. H. Pirie, Montreal.

SECTION ON MISCELLANEOUS TOPICS

Session on Anesthesia

WEDNESDAY, JUNE 12—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. John S. Lundy, Rochester, Minn., who expressed pleasure at the opportunity of welcoming the Canadian Association members and introduced the chairman of the Canadian section, Dr. Wesley Bourne of Montreal, who took the chair and presided.

Sir Francis E. Shipway, London, England, read a paper on "Tribrom-Ethanol: An Analysis of 1,600 Administrations." Discussed by Drs. Albert H. Miller, Providence, R. I.; Walter L. Muir, Halifax, N. S.; Russell F. Sheldon, Boston; C. N. Chipman, Washington, D. C., and Sir Francis E. Shipway, London, England.

Dr. Paul M. Wood, New York, read a paper on "Cinical Use of Cyclopropane and Tribrom-Ethanol." Discussed by Drs. Harold R. Griffith, Montreal; Henry S. Ruth, Philadelphia; Sir Francis E. Shipway, London, England; Thomas Drysdale Buchanan, New York; Philip D. Woodbridge, Boston, and Paul M. Wood, New York.

Drs. Simon Dworkin and Bernard B. Raginsky, Montreal, presented a paper on "The Effect of Anesthetics, Sedatives and Hypnotics on Conditioned Motor Reflexes." Discussed by Drs. Wesley Bourne, Montreal; Howard S. Liddell, Ithaca, N. Y., and Bernard B. Raginsky, Montreal.

Dr. John S. Lundy, Rochester, Minn., read the chairman's address, entitled "The Clinical Use of Anesthetic Agents and Methods," following which he took the chair and presided during the remainder of the session.

Dr. Lincoln F. Sise, Boston, read a paper on "Anesthesia for Thyrocardiac Patients." Discussed by Drs. Ansel M. Caine, New Orleans; Milton J. Raisbeck, New York; S. C. Wiggin, Newton, Mass., and Lincoln F. Sise, Boston.

Drs. Chester M. Kurtz, J. H. Bennett and H. H. Shapiro, Madison, Wis., presented a paper on "Electrocardiographic Studies During Surgical Anesthesia." Discussed by Drs. E. A. Rovenstine, New York; Lewis M. Hurxthal, Boston; Milton J. Raisbeck, New York, and Chester M. Kurtz, Madison, Wis.

Dr. Frank W. CoTui, New York, read a paper on "Spinal Anesthesia: The Experimental Basis of Some Prevailing Clinical Practices." Discussed by Drs. Meyer Saklad, Providence, R. I.; Philip D. Woodbridge, Boston, and Frank W. CoTui, New York.

Session on History of Medicine

THURSDAY, JUNE 13—MORNING

The meeting was called to order at 9:15 by the chairman, Dr. James B. Herrick, Chicago.

Chairman Herrick introduced the secretary of the Canadian section, Dr. H. E. MacDermot, Montreal, who represented the Canadian chairman, Dr. W. W. Francis, Montreal, who was unable to attend.

Dr. Herrick read his introductory remarks.

Dr. David Riesman, Philadelphia, read a paper on "Deceased Diseases." Discussed by Drs. James B. Herrick, Chicago, and Phillip G. Corliss, Somerton, Ariz.

Dr. H. E. MacDermot, Montreal, read a paper by Dr. Leo E. Pariseau, Montreal, on "Jacques Cartier (A. D. 1535) and the History of Scurvy." Discussed by Drs. Richmond C. Holcomb, Highland Park, Pa., and H. E. MacDermot, Montreal.

Dr. F. L. Reichert, San Francisco, read a paper on "Anatomy in the Making." Discussed by Dr. David Riesman, Philadelphia.

Dr. H. E. MacDermot read a paper by Dr. W. B. Howell, Montreal, on "Walter Henry, Army Surgeon in the Early Nineteenth Century." Discussed by Dr. Jabez H. Elliott, Toronto.

Dr. Roland Hammond, Providence, R. I., read a paper on "Medicine in the Time of the Crusades."

On motion by Dr. Richmond C. Holcomb, Highland Park, Pa., seconded and carried, the loss of Fielding Garrison, an outstanding, scholarly, medical historian, was deplored, an international loss.

The secretary, Dr. Major G. Seelig, St. Louis, read a letter from Dr. J. Oscar Thompson, of Upper Darby, Pa., on a letterhead of the Canton Hospital, Canton, China, regarding the celebration on Nov. 4, 1935, of the centenary of the introduction of modern medicine into China and the founding of Canton Hospital by Dr. Peter Parker, a graduate of Yale, and the fiftieth anniversary of Dr. Sun Yat-Sen's beginning to study medicine at Canton Hospital.

It was moved by Dr. Isaac A. Abt, Chicago, seconded and carried, that the matter be referred to the secretary, with a request that the House of Delegates of the American Medical Association send felicitations of this joint meeting of the session. Dr. Abt volunteered to present the matter to the House of Delegates at the afternoon session.

Dr. O. H. Leber, New York, made a motion, which was duly seconded and carried, that a petition be sent to the House of Delegates that a session on historical medicine be held every year.

Session on Military Medicine

FRIDAY, JUNE 14—MORNING

The meeting was called to order at 9:25 by Dr. Holman Taylor, Fort Worth, Texas, secretary of the section, who introduced Dr. W. H. Delaney, Quebec, the Canadian secretary, to preside in the absence of the chairmen.

Dr. George W. Rice, Washington, D. C., read a paper on "Peace-Time Medical Department Reserve Training." Discussed by Drs. E. A. Meyerding, St. Paul; Ernest Fulton Risdon, Toronto; Holman Taylor, Fort Worth, Texas, and John B. Klopp, Chester, Pa.

Dr. Ernest Fulton Risdon, Toronto, read a paper on "Surgical Care of the Facially Wounded." Discussed by Dr. Robert H. Ivy, Philadelphia.

Dr. M. C. Stayer, Carlisle, Pa., read a paper on "The Relationship of the Medical Officer to the Combat Officer." Discussed by Drs. Holman Taylor, Fort Worth, Texas, and James H. Huddleson, New York.

Dr. P. R. Bolus, Ottawa, Ont., read a paper on "Shell Shock in Past and Future Wars." Discussed by Drs. James H. Hudleson, New York, and P. R. Bolus, Ottawa, Ont.

Dr. Charles H. Frazier, Philadelphia, read a paper on "The Modern Treatment of Surgical Shock." Discussed by Drs. Charles C. Lund, Boston, and Norman E. Freeman, Boston.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Atlantic City session occupied the largest amount of floor space in the history of the Association, covering more than 45,000 square feet. There were more than 200 exhibits of a purely scientific nature. All fifteen sections of the Scientific Assembly participated through special section exhibit committees appointed for the purpose, while the exhibits were correlated closely with the papers read in the Scientific Assembly.

There were four special exhibits authorized by the Board of Trustees. The exhibit on diabetes, under the direction of a committee headed by Dr. E. P. Joslin of Boston, covered all aspects of diabetes and its treatment. The other members of the committee were F. G. Banting, co-chairman, Toronto; C. H. Best, Toronto; H. F. Root, Boston; R. M. Wilder, Rochester, Minn., and R. T. Woodyatt, Chicago. This committee was assisted by a corps of demonstrators, as follows: F. M. Allen, New York; C. J. Barborka, Chicago; J. T. Beardwood, Philadelphia; C. F. Bolduan, New York; B. D. Bowen, Buffalo; Gladys L. Boyd, Toronto; W. R. Campbell, Toronto; C. D. Christie, Cleveland; L. I. Dublin, New York; Reginald Fitz, Boston; H. R. Geyelin, New York; Henry J. John, Cleveland; W. R. Jordan, Richmond, Va.; E. P. Joslin, Boston; C. F. Kemper, Denver; H. L. Lombard, Boston; Alexander Marble, Boston; E. H. Mason, Montreal; H. O. Mosenthal, New York; J. E. Paullin Jr., Atlanta, Ga.; Elaine Ralli, New York; E. L. Sevringhaus, Madison, Wis.; H. J. Spencer, New York; T. P. Sharkey, Dayton, Ohio; Shields Warren, Boston; Priscilla White, Boston, and J. W. Williams, Rochester, N. Y.

The exhibit on the prevention of asphyxial deaths was presented under the direction of a committee headed by C. L. Jackson, Philadelphia, assisted by a committee composed of Harrison S. Martland, Newark, N. J., and R. R. Sayers, Washington, D. C. This committee was assisted by a corps of demonstrators, as follows: Alvan L. Barach, New York; Charles L. Bossert, Atlantic City, N. J.; C. W. Buckmaster, Yonkers, N. Y.; Jesse G. M. Bullowa, New York; P. J. Flagg, New York; Wheaton Fregeau, New York; John F. McGrath, New York; A. Harry Neffson, New York; Lawrence W. Smith, New York, and Warren T. Vaughan, Richmond, Va. Each of the three members of the committee had fine exhibits in this group. Special commendation is given to the Atlantic City life guards for the excellent demonstration which they gave in connection with this exhibit.

The exhibit on vaccines and serums was a cooperative undertaking by the Committee on Scientific Exhibit and the United States Public Health Service. The committee in charge consisted of R. C. Williams, chairman, Washington, D. C.; James P. Leake, Washington, D. C., and W. G. Workman, Washington, D. C.; this committee was assisted by the following demonstrators: C. F. McKhann, Boston; S. S. Cook, Washington, D. C.; W. T. Harrison, Washington, D. C., and R. H. Miller, Washington, D. C.

The special exhibit on nutrition was presented by a committee composed of Reginald Fitz, chairman, Boston; Walter C. Alvarez, Rochester, Minn., and L. H. Newburgh, Ann Arbor, Mich.

Among the section exhibits there were several special features. The Section on Dermatology and Syphilology had a special symposium on syphilis, and the Section on Preventive and Industrial Medicine and Public Health had a symposium on tuberculosis. There were so many exhibits on cancer that they were grouped together to form a symposium on cancer. There were several motion picture programs sponsored by sections, including the Section on Orthopedic Surgery, the Section on Obstetrics, Gynecology and Abdominal Surgery, the Section on Nervous and Mental Diseases and the Section on Ophthalmology.

There were 205 exhibits open to awards, including eighteen educational exhibits. The four special exhibits and the exhibits of the American Medical Association are not open to awards.

REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards made the following report:

CLASS I

[Awards in Class I are made for exhibits of individual investigations, which are judged on the basis of originality and excellence of presentation.]

The gold medal to F. L. Adair and M. Edward Davis, Department of Obstetrics and Gynecology, University of Chicago, Chicago, for original investigations in the development of ergot as a therapeutic agent and especially of a new active principle isolated in crystalline state from ergot, together with its pharmacologic and medicinal properties.

The silver medal to L. G. Rowntree, J. H. Clark and Arthur Steinberg, Philadelphia Institute of Medical Research, Philadelphia General Hospital, Philadelphia, and A. M. Hanson, Faribault, Minn., for original investigations on the biologic effects of thymus and pineal extracts.

The bronze medal to Jane Sands Robb, J. G. Fred Hiss and R. C. Robb, Syracuse University School of Medicine, Syracuse, N. Y., for original investigations on cardiac muscle-bundle physiology and experimental coronary lesions.

Certificates of Merit, Class I, are awarded to the following (alphabetically arranged):

Bede J. Harrison, Vancouver General Hospital, Vancouver, B. C., for exhibit illustrating a new method of orientation applicable to the body and the x-ray beam.

Aaron E. Kanter, Carl P. Bauer and Arthur H. Klawans, Rush Medical College of the University of Chicago, Chicago, for exhibit illustrating a new biologic test for hormones in pregnancy urine.

Isaac Schour and A. G. Brodie, University of Illinois College of Dentistry, Chicago, for exhibit illustrating the effect of metabolic disturbances on teeth.

CLASS II

[Awards in Class II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of excellence of presentation.]

The gold medal to Stuart Harrington and Willis S. Lemon, Mayo Foundation for Medical Education and Research, Rochester, Minn., for excellence of presentation of exhibit illustrating the surgical treatment and clinical manifestations of various types of diaphragmatic hernia and intrathoracic tumors.

The silver medal to David W. MacKenzie and Alexander B. Wallace, urologic department, Royal Victoria Hospital, Montreal, for excellence of presentation of exhibit on lymphatic studies, particularly relation of lower urinary and genital tracts to renal infections.

The bronze medal to James Harold Mendel, Philadelphia, for excellence of presentation of exhibit on ear drums and their interpretation.

Certificates of merit, Class II, are awarded to the following (alphabetically arranged):

T. G. H. Drake, Hospital for Sick Children, Toronto, for excellence of presentation of exhibit illustrating infant care and feeding in ancient times.

Jacob Gershon-Cohen and Albert Strickler, Philadelphia Skin and Cancer Hospital Philadelphia, for excellence of presentation of exhibit illustrating roentgenographic studies of the normal female breast.

C. C. Higgins, Cleveland Clinic, Cleveland, for excellence of presentation of exhibit illustrating transplantation of ureters.

Dudley C. Smith, W. A. Brumfield Jr. and E. E. Barksdale, University of Virginia, Charlottesville, Va., for excellence of presentation of exhibit illustrating practical epidemiology of syphilis.

HONORABLE MENTION

In addition, the following exhibits are deemed worthy of honorable mention (alphabetically arranged):

That of Maude E. Abbott, McGill University, Montreal, illustrating the clinical classification of congenital heart disease.

That of K. K. Chen, Charles L. Rose and G. H. A. Clowes, Lilly Research Laboratories, Indianapolis, on cyanide poisoning.

That of Theodore Cornbleet and E. R. Pace, University of Illinois College of Medicine, Chicago, on the physiologic and biologic studies of sweat with clinical implications.

That of M. S. Dooley and J. Solon Mordell, University Hospital and College of Medicine, Syracuse University, Syracuse, N. Y., on rational drug therapy in hospitals.

That of Earl W. Flosdorf and Stuart Mudd, University of Pennsylvania School of Medicine, Philadelphia, on the preservation of serum and other biologicals by desiccation in vacuo from the frozen state.

That of Frank W. Hartman, R. D. McClure and C. I. Allen, Henry Ford Hospital, Detroit, on the pathology and treatment of burns.

That of Sherwood Moore, the Edward Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, on a new metabolic disorder and its pathognomonic radiology signs in the skull.

That of Norman Treves, Memorial Hospital, New York, on inflammatory carcinoma of the female breast.

That of S. A. Weisman, University of Minnesota Medical School, Minneapolis, on the normal development of the human chest.

GROUP EXHIBITS

A special certificate of merit is awarded to each of the following group exhibits:

Group exhibit from Temple University School of Medicine, Philadelphia, on the correlation of clinical results obtained in various branches of medicine by regulation of the cerebral hydrodynamics and the methods of treatment involved. The following individuals were responsible for this work: Temple Fay, W. E. Chamberlain, J. O. Arnold, John Royal Moore, J. Garrett Hickey, Nicholas Gotten and John H. Taeffner.

Group exhibit from the University of Pennsylvania School of Medicine, Philadelphia, on the small intestine. The following individuals were responsible for this work: T. Grier Miller, W. Osler Abbott, Katherine O'S. Elson, William G. Karr, P. J. Morrison, I. S. Ravdin, Charles G. Johnson, Wright Wilson, F. A. Cajori, Edwin J. DeBeer, Henry K. Pancoast, Eugene P. Pendergrass, Philip J. Hodes and J. Robert Andrews.

Group exhibit from Columbia University and the Hospital for Joint Diseases, New York, aided by Carnegie Institution of Washington, D. C., on studies on crystalline vitamin B_1. The following individuals were responsible for this work: Robert E. Waterman, John C. Keresztesy, H. T. Clarke, Samuel Gurin, Edwin R. Buchan, A. E. Ruehle, Oscar Wintersteiner, Martin G. Vorhaus, Sidney Berkowitz, and Robert R. Williams and Marion Ammerman.

Group exhibit from the Lahey Clinic on Surgical Treatment of Thyroid Diseases; exploration of common duct and abdominoperineal resection of the rectum. Frank H. Lahey and Richard B. Cattell were responsible for this work.

EDUCATIONAL CLASSIFICATION

A special certificate of merit is awarded to the American Heart Association, New York, for its exhibit illustrating heart disease as a sudden cause of death and cardiac disability associated with thyrotoxicosis.

SPECIAL EXHIBITS

The Committee on Awards wishes particularly to commend the special exhibits sponsored by the American Medical Association and feels that a special debt of gratitude is owed to Dr. E. P. Joslin and his committee for the splendid exhibit on diabetes; to Dr. C. L. Jackson and his committee for the splendid exhibit on the prevention of asphyxial death, with a special vote of thanks to the Atlantic City life guards for their demonstrations; to the United States Public Health Service for its cooperation in the exhibit on vaccines and serums, and to Dr. Reginald Fitz and his committee for the nutrition exhibit.

SPECIAL COMMENDATIONS

The Committee on Awards desires to commend especially the following exhibits:

Those exhibits illustrating the symposium on syphilis by the Section on Dermatology and Syphilology and the symposium on tuberculosis by the Section on Preventive and Industrial Medicine and Public Health.

Those of the various councils and bureaus of the American Medical Association.

The Committee on Awards wishes to express its appreciation as well as that of the Committee on Scientific Exhibit of the Board of Trustees for the splendid cooperation of the Canadian Medical Association in sending so many outstanding exhibits to this meeting.

Special commendation is given to the exhibit on the Dionne quintuplets by Dr. Allan Roy Dafoe, Callander, Ont., and Dr. William A. Dafoe, Toronto.

RECOMMENDATIONS

The Committee on Awards wishes to draw attention to the larger number of exhibits this year illustrating experimental investigations of direct clinical interest. The committee realizes fully the fundamental value of accurate observations in medicine and recognizes that the physician in general practice must ever be kept in mind in the presentation of exhibits, yet it wishes to emphasize also that exhibits showing the most recent advances in experimental medical investigations must be encouraged.

The Committee on Awards believes that the policy of correlating the Scientific Exhibit with the Scientific Assembly by the appointment of section exhibit committees is advantageous and it is noted with satisfaction that all the sections have again appointed such committees. The attention of the section officers is respectfully directed to the fact, however, that the section exhibit committees must be chosen with great care so that the most noteworthy research in the various specialties may be represented in the Scientific Exhibit. The Committee on Awards suggests that perhaps the time has come when the committees should consider a selective limitation of section exhibits to be included in the Scientific Exhibit in order better to control its size and at the same time secure exhibits of the most important work in the different fields of medicine.

The Committee on Awards wishes to commend especially the large number of individual exhibitors who have developed their exhibits entirely from their own resources and without outside financial aid.

The Committee on Awards believes that the members and Fellows of the American Medical Association owe a debt of gratitude to the Committee on Scientific Exhibit of the Board of Trustees, to the Advisory Committee and to Dr. Thomas G. Hull, executive in charge of the arrangements of the Scientific Exhibit.

The Committee on Awards feels that it cannot commend too highly the appropriate arrangements, general and special, the excellent management, the instructiveness and the scientific as well as the practical value of the exhibit. Many physicians and investigators, often at great personal sacrifice, have presented exhibits dealing with various aspects of medicine, prepared by means of modern methods and devices for the visualization of the most recent advances. The committee also desires to praise the efforts by many exhibitors to increase the attractiveness of their exhibits.

LUDVIG HEKTOEN, Chairman, Chicago.
D. CHESTER BROWN, Danbury, Conn.
EBEN J. CAREY, Milwaukee.
D. SCLATER LEWIS, Montreal.
THOMAS G. ORR, Kansas City, Mo.
RALPH M. TYSON, Philadelphia.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Bill Passed.—H. 300 has passed the house, proposing to prohibit the sale or distribution of barbital, sulphonethylmethane (trional), sulphonmethane (sulphonal), diethylsulphon diethylmethane (tetronal), paraldehyde and chloral or chloral hydrate and any derivatives, compounds or mixtures of any of these drugs possessing hypnotic properties or effects, except on the written prescription of a licensed physician.

ARKANSAS

Personal.—Dr. John H. Weaver has been appointed health officer of Hope and Dr. Andrew S. Gregg health officer of Fayetteville.

Society News.—Dr. Bryce Cummins, Little Rock, among others, addressed the Southeast Arkansas Medical Society recently on control of acute infectious disease with the latest vaccines and serums.——Speakers before the Lawrence County Medical Society at a recent meeting were Drs. Horace R. McCarroll, Walnut Ridge, on "Puerperal Eclampsia," and Thomas C. Guthrie, Smithville, "Vomiting of Pregnancy."—— The Mississippi County Medical Society was addressed recently by Drs. Duane M. Carr on surgery in diseases of the chest; Conley H. Sanford, treatment of pneumonia, and Thomas D. Moore, Memphis, Tenn., conservative treatment of surgical lesions of the kidney.——A symposium on diabetes constituted the program of the Garland and Sebastian county medical societies recently. Speakers were Drs. Arthur F. Hoge, Everett C. Moulton and James W. Amis, Fort Smith. At a meeting of the Sebastian County Medical Society, May 13, Dr. Clarence B. Billingsley, Fort Smith, discussed enuresis and Dr. Ira F. Jones, Fort Smith, pyelitis in childhood.

CALIFORNIA

Exhibit of Rare Books.—The University of California Medical School Library announces an exhibition of rare books recently presented to the medical school by Mrs. Myrtle Crummer Ingram, in memory of her late husband, Dr. Leroy Crummer. Included in the collection are the 1651 edition of Harvey's work on generation; a Latin edition of Rosslin's "de Partu Hominis," the Renaissance work on obstetrics; Phrysius's "Spiegl der Artzny"; the 1628 edition of Aselli's "De Lactibus," and the famous poem by Alexander Pope "An Epistle to Dr. Arbuthnot."

State Association Cooperates with Medical Schools.—The house of delegates of the California Medical Association recently decided to sponsor a series of state-wide graduate courses in cooperation with the medical schools of the state. A series of courses was recently concluded in the districts about Santa Rosa, Sacramento, San Jose and Fresno, in collaboration with local groups of practicing physicians under the auspices of the University of California Medical School. The data developed from this series were turned over to the state medical association, which appointed a committee to work out the details of the future meetings and clinics.

Society News.—The Los Angeles Society of Neurology and Psychiatry was addressed, June 19, by Dr. George Creswell Burns, among others, on "Psychoses Due to Bromide Intoxication."——Dr. Leon J. Menville, New Orleans, discussed visualization of the lymphatic system before the radiologic section of the Los Angeles County Medical Association, May 8. ——A symposium on tuberculosis was presented before the San Diego County Medical Society, June 11, by Drs. Bryant R. Simpson, Rudolph H. Sundberg and Einor H. Christopherson. ——The Los Angeles Surgical Society was addressed, May 10, among others, by Dr. James F. Percy on "Cautery Excision and Protein Absorption in the Treatment of Accessible Cancer."

Reunion of Past Presidents.—At the recent meeting of the California Medical Association, the first annual reunion of past presidents was held at an informal breakfast, May 14. Of the eleven past presidents in attendance at the session, nine were present: Drs. George H. Kress, Los Angeles, 1917; Cornelius Van Zwaluwenburg, Riverside, 1919; John H. Graves, San Francisco, 1922; Edward N. Ewer, Oakland, 1926; William H. Kiger, Los Angeles, 1927; Morton R. Gibbons, San Francisco, 1929; Lyell C. Kinney, San Diego, 1930; Junius B. Harris, Sacramento, 1931, and George G. Reinle, Oakland, 1933. Dr. Robert A. Peers, Colfax, president-elect, presided. Speakers included Drs. James S. McLester, Birmingham, then President-Elect, American Medical Association, and Clarence G. Toland, Los Angeles, then president of the state association.

CONNECTICUT

Portrait of Dr. Winternitz.—An oil portrait of Dr. Milton C. Winternitz, dean, Yale University School of Medicine, was presented to the school by the student body, June 17, at the annual meeting of the Association of Yale Alumni in Medicine in the Sterling Hall of Medicine. Dr. Winternitz retires from the deanship this year after fifteen years' service. Dr. Stanhope Bayne-Jones, who will succeed Dr. Winternitz as dean, accepted the portrait in behalf of the school and university. Charles-Edward A. Winslow, Dr.P.H., was among the speakers. Dr. George Blumer, New Haven, was chosen president of the alumni association for the coming year.

Changes in Health Officers.—Dr. Edward J. Finn has been appointed to succeed Dr. Francis I. Nettleton as health officer of Shelton and Dr. John D. Milburn to succeed the late Dr. Frederick T. Fitch as health officer of East Hampton. Dr. Thomas O. Murry is health officer of Beacon Falls, succeeding Dr. David H. Bluestone, who now lives in Naugatuck. Dr. Charles E. Kaufman, West Haven, is completing the unexpired term of the late Dr. Charles A. Bevan. Dr. Matthew Griswold will complete the unexpired term of the late Dr. Roger M. Griswold as health officer of the town of Berlin. Dr. John J. Gaffney has been appointed town health officer of Danbury, succeeding Dr. Felix F. Tomaino, who was recently named health officer of the city of Danbury.

DISTRICT OF COLUMBIA

Medical Bills in Congress.—S. 2939 has been reported to the Senate, providing for the issuance of a license to practice the healing art in the District of Columbia to Dr. Ronald A. Cox (S. Rept. No. 940).

GEORGIA

Increase in Rabies.—There were 1,104 heads of animals examined for rabies in the laboratory division of the state department of health during 1934, as compared with 951 during 1933. Between 40 and 50 per cent of these examinations showed positive results, it was stated. During the first four months of 1934 a total of 177 heads were found positive and a total of 1,105 human treatments administered, while for the same period of 1935 a total of 247 positive heads were found, with a total of 1,226 human treatments.

ILLINOIS

Bill Passed.—H. 44 has passed the house and senate, proposing to repeal the laws regulating the distribution and possession of narcotic drugs and to enact what apparently is the uniform narcotic drug act.

Modification of Quarantine Regulations.—The Illinois State Department of Health has announced changes in the quarantine regulations effective at once. Patients with epidemic encephalitis will be isolated for two instead of three weeks and the quarantine period for measles is reduced to five instead of seven days from the date of appearance of the rash, provided the catarrhal symptoms have cleared up. Hospital patients with communicable disease may not be removed or discharged without the consent of the local or state health authorities; common carriers are forbidden to transport birds of the parrot family without a certificate signed by the state health authority indicating freedom from psittacosis. Quarantine of patients with whooping cough is made more stringent, requiring isolation of all patients for three weeks after the onset of the paroxysmal cough. The modified quarantine, which permitted these patients, identified by special arm bands, the freedom of the home premises, has been rescinded. Scarlet fever patients must always be isolated for a minimum period of three weeks and longer if necessary on account of complications. Release by laboratory tests of specimens has been abandoned as impracticable. Ophthalmia neonatorum must be reported within six hours after detection, according to the new rules.

Chicago

Catalogue of Medical Literature at Crerar Library.—The Institute of Medicine of Chicago announces that the union catalogue of medical literature in the city is now open to the medical public for reference. Installed on the twelfth floor of the John Crerar Library, the catalogue represents the holdings in the libraries of the colleges of medicine and dentistry of

Northwestern University, of the colleges of medicine, dentistry and pharmacy of the University of Illinois, most of the holdings in the biomedical libraries of the University of Chicago, and much of those in the John Crerar Library and in the library of Rush Medical College. The card index is up to date; the medical libraries each month send in cards for their new acquisitions; it is hoped to include soon the important material in the smaller medical libraries of the city. The initial fund for the establishment of the catalogue was made available two years ago by the Institute of Medicine. The organization work was entrusted to a committee on coordination of medical libraries in Chicago, which had been appointed the previous year. The first aim of the committee was to bring about closer integration of effort among the major medicobiologic libraries of the city, to obviate unnecessary duplication of special literature, and to divert the economies achieved to a fuller representation of the world's medical literature in Chicago. The second aim was the creation of a union card index centrally placed, so that investigators in medical problems may locate reference volumes with the least expenditure of time and energy.

INDIANA

Hospital News.—Funds to provide a three story annex to the Ball Memorial Hospital, Muncie, have been made available by the Ball family; the new addition is expected to cost $200,000.——St. Joseph Hospital, Mishawaka, celebrated its twenty-fifth anniversary, April 22.

Personal.—Dr. Benjamin J. Teaford, Jonesville, has been appointed health commissioner of Bartholomew County.——Dr. Dudley A. Pfaff, Indianapolis, has been named a member of the newly created merit commission for the police and fire departments, according to the Indianapolis *Star*.

IOWA

Society News.—Dr. Cora Beele Williams Choate, Marshalltown, was elected president of the Society of Iowa Medical Women at its recent annual meeting.——A special joint meeting of the Butler and Mitchell County medical societies was recently addressed at Greene by Drs. George E. Krepelka, Stacyville, on "Resection of the Small Bowel," and Theodore E. Blong, Stacyville, "Diabetes Mellitus." Dr. John O. Eiel, Osage, reported a case of pancreatic cyst.——A symposium on gallbladder diseases was presented before the Cerro Gordo County Medical Society recently by Drs. Charles and Joseph G. Mayo and Claude F. Dixon, all of Rochester, Minn.——Speakers before a joint meeting of the Johnson, Cedar, Muscatine, Louisa, Washington and Iowa county medical societies, May 1, in Iowa City, included Drs. Arthur C. Pattison and Frederic E. Hambrecht, on "The Factor of Age in the Mortality of Acute Appendicitis" and "Russell's Traction in Fractures of the Femoral Shaft" respectively.——Dr. George H. Bassett, Sac City, addressed the Sac County Medical Society in Odebolt recently on "Arteriosclerosis and Hypertension."

LOUISIANA

Personal.—Dr. Asahel J. Hockett, since 1931 chief resident physician at State of Wisconsin General Hospital, Madison, Wis., has been appointed superintendent of the Touro Infirmary, New Orleans, succeeding Dr. Basil C. MacLean.

Society News.—At a meeting of the Orleans Parish Medical Society, June 24, Harold Hinman, Ph.D., and Dr. Rudolph H. Kampmeier discussed "Trichiniasis in Louisiana" and "Clinical Aspects of Trichiniasis," respectively. Dr. Sydney Jacobs spoke on "Pituitary Infantilism."——Dr. George A. Mayer was chosen president of the New Orleans Gynecological and Obstetrical Society at a recent meeting.

MARYLAND

Personal.—Drs. William Allen Deckert, John M. Haws and Isadore A. Siegel have been appointed health officers in the division of maternity hygiene of the Baltimore Health Department.

Society News.—Dr. Wilder Graves Penfield, director, Montreal Neurological Institute, among others, addressed the Johns Hopkins Medical Society, Baltimore, April 8, on "Head Pain."——Dr. John A. Kolmer, Philadelphia, discussed vaccine used in the prevention of infantile paralysis before the Washington County Medical Society, recently, in Hagerstown.

In Memory of Dr. Welch.—A bronze plaque was unveiled and dedicated at the Happy Hills Convalescent Home for Children, Baltimore, June 5, in honor of the late Dr. William H. Welch, one of the founders and first president of the institution. The tablet was unveiled by Dr. Henry Barton Jacobs, also one of the founders and present vice president of the home. Addresses were made by Dr. Edwards A. Park and by Mr. Alfred Jenkins Shriver, a friend of Dr. Welch. The home contains accommodations for sixty children and offers convalescent care without charge to those who are unable to receive proper treatment in their homes. Dr. Benjamin Tappan is medical director.

MASSACHUSETTS

Health Service Plan for Employees.—The New England Health Center, comprising the Boston Floating Hospital, Boston Dispensary and Tufts College Medical School, has adopted a health service plan by which a standard of health supervision will be maintained for its employees. The plan, which covers routine physical examination, the keeping of records, and treatment, will be under the direction of Dr. Katherine S. Andrews of the department of medicine.

Personal.—Dr. Walter B. Cannon, George Higginson professor of physiology, Harvard Medical School, Boston, was elected an honorary member of the National Academy of Medicine of Spain at the recent celebration of the two hundredth anniversary of its founding, *Science* reports.——Dr. Abraham Myerson was recently appointed clinical professor of psychiatry at Harvard Medical School, Boston.——Dr. Charles Sidney Burwell, dean-elect and research professor of clinical medicine, Harvard Medical School, Boston, has been appointed to the staff of Peter Bent Brigham Hospital, where he will continue clinical investigations of heart disease.

State Medical Meeting and Election.—Dr. Charles E. Mongan, Somerville, was chosen president of the Massachusetts Medical Society at its recent annual meeting in Boston, June 3-5. Dr. Channing Frothingham, Boston, was named vice president, and Dr. Alexander S. Begg, Boston, secretary. Dr. Begg has been acting secretary since the death of Dr. Walter L. Burrage. The next annual session will be held in Springfield. The Shattuck Lecture was delivered Monday evening by Dr. William E. Gallie, professor of surgery, University of Toronto Faculty of Medicine, on "Sprains and Dislocations." Speakers from outside the state included:

Dr. Carl Henry Davis, Milwaukee, Diagnosis and Treatment of Lesions of the Cervix Uteri.
Dr. William Bierman, New York, Fever and Short Wave Radiations.
Dr. John R. Carty, New York, Diagnostic Possibilities in Soft Tissue Radiography.
Dr. John P. Peters, New Haven, Conn., Factors in Etiology of Bright's Disease.

At this meeting, Dr. David Cheever, surgeon at the Peter Bent Brigham Hospital, was designated official press representative of the association, the first time the society has filled this position. The society plans to make a survey next September to determine whether there are adequate medical and hospital facilities in the state.

MICHIGAN

Personal.—Dr. James L. McCartney, director of mental hygiene at Battle Creek Sanitarium, has resigned to become chief psychiatrist at the New York State Vocational Institution on the Hudson River at West Coxsackie, N. Y., a correctional institute operated by the state department of correction for boys between the ages of 10 and 16.——Dr. Linda Gage Roth, dean of women at Battle Creek College, was elected president of the Michigan Student Health Association at a meeting, May 4.——Wayne University conferred the honorary degree of doctor of science in education on Dr. William M. Donald, Detroit, at its recent commencement.——Dr. Thomas R. Ponton has been named acting superintendent of Hurley Hospital, Flint.

Society News.—Dr. Henry J. Pyle, Grand Rapids, was elected president of the Michigan Association of Industrial Physicians and Surgeons at its recent annual meeting.——Dr. Paul S. Barker, Ann Arbor, conducted a clinic and talked on "Heart Disease in Children" before the Barry County Medical Society recently in Hastings.——At a meeting of the Shiawassee County Medical Society in May, Drs. Lloyd E. Verity and Russell L. Mustard, Battle Creek, discussed peptic ulcer.——Dr. Myron William Clift, Flint, spoke on "Common Pathologic Changes in the Spine with Especial Reference to the Mechanical Forces Involved" before the St. Clair County Medical Society in Port Huron, May 21. Dr. George J. Curry, Flint, reported a series of six cases of musculospiral palsy.

MISSISSIPPI

Meeting Dedicated to State President-Elect.—The Central Medical Society dedicated its meeting in Jackson, June 4, to Dr. Harvey F. Garrison, Jackson, president-elect of the Mississippi State Medical Association, the first member of the society to be named for this position since 1904. In that year Dr. Thomas J. Mitchell, Jackson, was elected.

MISSOURI

Class Reunion.—A reunion of the class of 1895 of the Missouri Medical College was held, June 15-16, at Wildwood Springs Hotel, Steelville. Dr. Robert J. Terry, St. Louis, acted as toastmaster. Dr. Robert E. Schlueter, St. Louis, gave a history of the class; Dr. John Zahorsky, St. Louis, read a poem entitled "Forty Years Ago," and Dr. Marcellus George Gorin, St. Louis, presented reminiscences.

Personal.—Dr. Ralf Hanks, Fulton, has been named superintendent of state hospital number one at Fulton to succeed Dr. Raymond C. Fagley, resigned.——Dr. Henry J. Ulrich has been appointed superintendent of the City Isolation Hospital, St. Louis, succeeding Dr. John Eschenbrenner, who resigned, May 1, to enter private practice in Ardmore, Okla. Dr. Ulrich has been a resident physician at the hospital since 1929.——Dr. Hugh P. Muir has been named health commissioner of Columbia to succeed the late Dr. Wilford A. Norris.

Annual Fall Conference.—The thirteenth annual fall clinical conference of the Kansas City Southwest Clinical Society will be held at the President Hotel, Kansas City, October 7-10. A tentative program includes the following physicians:

John Alexander, Ann Arbor.
Fred H. Albee, New York.
William Wayne Babcock, Philadelphia.
Harlow Brooks, New York.
Arthur C. Christie, Washington, D. C.
Alfred I. Folsom, Dallas.
Harry S. Gradle, Chicago.
Francis E. LeJeune, New Orleans.
William S. Middleton, Madison.
Mynie G. Peterman, Milwaukee.
Edward A. Schumann, Philadelphia.
Albert Soiland, Los Angeles.
Cyrus C. Sturgis, Ann Arbor.

Society News.—Dr. Oliver C. Wenger of the U. S. Public Health Service, Hot Springs National Park, addressed a meeting of the St. Louis Medical Society recently under the auspices of the Missouri Social Hygiene Association; his subject was "Venereal Disease as a Public Health Problem." Speakers before the Society recently were Drs. Joseph Edgar Stewart on "Treatment of Fracture of the Neck of the Femur"; Arthur M. Alden, "Value of Ionization in the Treatment of Certain Forms of Allergy," and Sherwood Moore, "Metabolic Craniopathy."——Dr. Jacob Kulowski, St. Joseph, among others, spoke before the Jackson County Medical Society recently on "Osteomyelitis of the Spine and Pelvis."

MONTANA

Society News.—At a meeting of the Mount Powell Medical Society at the Montana Hotel, Anaconda, May 18, Dr. Henry E. Michelson, professor of dermatology, University of Minnesota Medical School, spoke on "Diagnosis and Treatment of Diseases of the Skin." A clinic was held during the session.

Railway Surgeons' Meeting.—The Great Northern Railway Surgeons' Association held its annual meeting in Glacier Park, July 1-2, with the following physicians on the program:

Charles L. Scudder, Boston, Emergency Treatment of Fractures.
Loyal Davis, Chicago, Treatment of Spinal Cord Injuries.
Francis J. Savage, St. Paul, Fracture of the Surgical Neck of the Humerus.
Sumner L. S. Koch, Chicago, Treatment of Injuries of the Hand.
Archibald E. Cardle, Minneapolis, Management of the Diabetic Railway Employee.
Berton J. Branton, Willmar, Minn., Malpractice Suits.
Leslie J. Stauffer, Priest River, Idaho, Alleged Sacro-Iliac Strains.
Charles N. Spratt, Minneapolis, Traumatic Detachment of the Retina.
Russell B. Richardson, Great Falls, Dislocations of the Knee Joint.
John G. Cunningham, Spokane, Wash., Septic Arthritis of the Knee Joint.
Arthur N. Collins, Duluth, Minn., Trauma and the Malignant Testis.

NEW JERSEY

Society News.—Dr. Ralph L. Barrett, New York, discussed "Electrosurgical Treatment of Common Cervical Lesions" before the Middlesex County Medical Society recently.——At a meeting of the Morris County Medical Society, May 16, Dr. George G. Ornstein, New York, spoke on "The Clinical Classification of Tuberculosis."

A New Neuropsychiatric Society.—The New Jersey Neuropsychiatric Association was recently organized at a meeting at the Academy of Medicine of Northern New Jersey, Newark, with forty-six members. Officers elected were Drs. Christopher C. Beling, Newark, president; Marcus A. Curry, Greystone Park, vice president, and Lewis H. Loeser, Newark, secretary. The purposes are: "to promote the science and practice of neuropsychiatry and to maintain high professional standards in that field."

NEW MEXICO

State Medical Election.—Dr. Mallory B. Culpepper, Carlsbad, was chosen president-elect of the New Mexico Medical Society at the annual meeting in Albuquerque, May 24; Dr. Leo B. Cohenour, Albuquerque, was reelected secretary and Dr. Charles W. Gerber, Las Cruces, was installed as president. The 1936 meeting will be held in Carlsbad.

NEW YORK

Annual Alumni Meeting.—The Medical Alumni Association of Syracuse University held its annual meeting at the University, June 3-4. Clinics, demonstrations and case reports were presented by members of the staffs of University, St. Joseph's and Syracuse Memorial hospitals. Following are the guest speakers:

Dr. Leon H. Cornwall, New York, Pathogenesis of Multiple Sclerosis.
Dr. Emmett A. Dooley, New York, Fracture of the Femoral Neck.—the Technic and Evaluation of the Newer Methods of Treatment.
Dr. Lewis C. Ecker, Washington, D. C., Tuberculous Atelectatic Cirrhosis.
Dr. Robert S. Dinsmore Jr., Cleveland, Practical Aspects of Gallbladder Disease.
Dr. Harris A. Houghton, New York, The Coefficient of Correlation Between Ambard's Renal Salt Threshold and the Systolic Arterial Pressure.

At the annual banquet at the Hotel Syracuse Monday evening, June 3, Dr. Harlow Brooks, New York, made an address on "The Contribution of the American Indian to Modern Life."

New York City

Directory of Social Agencies.—The forty-first edition of the Directory of Social Agencies in New York has just been issued by the Welfare Council. Previous editions were published by the Charity Organization Society. In the present volume 1,377 agencies are listed, of which 169 are national organizations with headquarters in New York. Child welfare receives the greatest emphasis, with 386 agencies listed in this field. The handicapped are helped through forty-three agencies; health education is administered through thirty-three.

Hospital News.—Dr. Sigismund S. Goldwater, commissioner of hospitals, gave an address at the annual meeting of the Hospital for Joint Diseases recently on "The City's Hospitals in Theory and Practice."——The new Queens General Hospital, Jamaica, L. I., will be opened between September 1 and Jan. 1, 1936. It will have a capacity of 600 beds and be operated by the department of hospitals.——Bellevue Hospital reported a daily per capita cost of food for patients, staff and nurses of 27 cents in 1934; expenditures for the year totaled $2,862,000.

Academy Desires Relics for Museum.—For years, the New York Academy of Medicine has been building up a museum of the history of medicine. Believing that persons who possess old medical instruments or other objects of historical interest wish to see them carefully preserved and placed on exhibition, the curator of the museum asks that such persons write describing briefly objects they care to present. The museum has a number of duplicates which it will gladly exchange for articles that it does not possess. Letters should be addressed to The Curator, Museum of the History of Medicine, New York Academy of Medicine, 2 East One Hundred and Third Street, New York.

Diagnostic Service in Parasitology.—The increase in tropical diseases and parasitic infestations, brought about by the influx of people from Puerto Rico and other tropical countries, prompted the city department of health to establish diagnostic services in parasitology at several places throughout the city. The new service is intended for patients referred by private physicians and for patients seeking diagnosis. A survey to determine the prevalence of these tropical conditions is the main objective of the service. Stations are now operating at Meinhard Memorial Health Center, which serves as a substation for the East Harlem Health Center, the Post-Graduate Hospital and Long Island College Hospital.

Personal.—Dr. William Seaman Bainbridge was appointed to represent the United States at the eighth International Congress of Military Medicine, Surgery and Pharmacy in Brussels, June 27 to July 3.——Dr. Oswald T. Avery of the Rockefeller Institute for Medical Research received an honorary degree of doctor of laws from McGill University, May 30.——E. H. Lewinski-Corwin, Ph.D., was made honorary president of the International Hospital Association after he had presented his resignation as secretary at the congress of the association in Rome, May 19-26. Mr. Sydney Lamb, Liverpool, England, was appointed secretary.——Dr. Morris L. Rakieten, New Haven, Conn., has been appointed assistant professor of bacteriology at Long Island College of Medicine, Brooklyn.

Death of Dean Miller.—Adam M. Miller, M.A., dean of Long Island College of Medicine, died suddenly of heart disease at his home in Mountain Lakes, N. J., May 28. Dean Miller

was a graduate of Princeton University. From 1903 to 1912 he was instructor in the department of histology and embryology at the College of Physicians and Surgeons of Columbia University and from 1912 to 1914 assistant professor of anatomy. In the latter year he went to the Medical College of the Long Island College Hospital as professor of anatomy, retaining that position until his death. He was made associate dean of the medical school in 1920 and dean two years later. He played a leading part in the reorganization of the school into the present Long Island College of Medicine. He was co-author of a textbook on embryology.

NORTH DAKOTA

Society News.—Dr. Trygve Oftedal, Fargo, was elected president of the North Dakota Academy of Ophthalmology and Otolaryngology at its seventeenth annual session in Minot, recently. The guest speaker was Dr. Oscar B. Nugent, Chicago. He spoke on "Ulcers of the Cornea and Their Treatment."

State Medical Election.—Dr. William A. Gerrish, Jamestown, was chosen president-elect of the North Dakota State Medical Association at its annual meeting in Minot, May 28; Drs. Edwin L. Goss, Carrington, and William H. Long, Fargo, vice presidents. Dr. Archibald D. McCannel, Minot, was installed as president and Dr. Albert W. Skelsey, Fargo, reelected secretary. Next year's meeting will be in Jamestown.

OHIO

Personal.—Oscar A. Turner, sophomore medical student at Western Reserve University School of Medicine, Cleveland, received the Steuer Prize in Anatomy for 1935, the university announces, for studies of the growth of adenoids and of anatomy of the brain.

Faculty Changes at Western Reserve.—The following promotions in the faculty of Western Reserve University School of Medicine, Cleveland, were recently announced:

Dr. Harry Goldblatt, to be professor of experimental pathology.
Edward Muntwyler, Ph.D., associate professor of biochemistry.
John P. Quigley, Ph.D., associate professor of physiology.
Dr. Theodore T. Zuck, assistant professor of anatomy.
Dr. Clyde L. Cummer, assistant clinical professor of dermatology and syphilology.
Dr. John W. Holloway, assistant clinical professor of surgery.
Dr. Arthur J. Horesh, assistant clinical professor of pediatrics.
Dr. Fred C. Oldenburg, assistant clinical professor of medicine.

Dr. Gaius E. Harmon, associate professor of hygiene and vital statistics, has resigned to become chief of the bureau of epidemiology of the Chicago Board of Health.

Society News.—Drs. Arthur J. Skeel and Scott C. Runnels, Cleveland, addressed the Toledo Academy of Medicine, June 7, on "Postpartum Hemorrhage" and "Maternal and Fetal Mortality," respectively.——Dr. J. Isfred Hofbauer, Cincinnati, addressed the Butler County Medical Society recently on "Newer Aspects of the Diagnosis and Etiology of Uterine Carcinoma."——Dr. Ray W. Kissane, Columbus, addressed the Clark County Medical Society, Springfield, recently, on "Traumatic Heart Disease."——At a meeting of the Morrow County Medical Society recently in Mount Gilead, Drs. Sylvester J. Goodman and Eugene F. McCampbell, Columbus, discussed "Toxemias of Pregnancy" and "Newer Developments in Medicine," respectively.——Dr. Louis J. Karnosh, Cleveland, discussed "Psychoses of Great Men," June 7, at a meeting of the Montgomery County Medical Society in Dayton.

OKLAHOMA

Personal.—Dr. William C. Wait, McAlester, has been appointed superintendent of the Western Oklahoma Tuberculosis Sanatorium, Clinton.

Society News.—Drs. Howard E. Snyder, Winfield, Kan., and Charles T. Moran, Arkansas City, Kan., addressed the Garfield County Medical Society, Enid, May 30, on "Postoperative Pulmonary Atelectasis" and "Relationship Between Sinusitis and Chest Complications," respectively.——Dr. Julian Feild, Enid, was elected president of the Oklahoma Pediatric Society at the annual meeting in Oklahoma City in May.

Medical Examiners Reorganize.—Five new members were recently appointed to the state board of medical examiners: Drs. Thomas McElroy, Ponca City; Calvin E. Bradley, Tulsa; James D. Osborn Jr., Frederick; Galvin L. Johnson, Pauls Valley, and William W. Osgood, Muskogee. Drs. William T. Ray, Gould, and Lewis E. Emanuel, Chickasha, were reappointed. At a reorganization meeting Dr. McElroy was elected president, Dr. Bradley vice president, and Dr. Osborn secretary of the board.

OREGON

Society News.—At the forty-fourth annual meeting of the Southern Oregon Medical Society in Ashland recently, speakers were Drs. Karl H. Martzloff, Portland, on "Recognition of Cancer of the Cervix"; John D. Humber, San Francisco, "Surgical Treatment of Angina Pectoris"; Warren C. Hunter, Portland, "Some Aspects of Coronary Arterial Disease" and John M. Blackford, Seattle, "Medical Treatment and Follow Up of Gallbladder Disease."——Papers were presented before the Multnomah County Medical Society recently by Drs. John H. Fitzgibbon and Charles H. Manlove, Portland, on "Treatment of Cardiospasm" and "Clinical and Pathological Aspects of Venous Thrombosis," respectively.

PENNSYLVANIA

Society News.—Dr. John F. Erdmann, New York, addressed the Lehigh County Medical Society, Allentown, recently, on cholecystitis and cholangeitis.——Dr. Jesse C. Arnold, Philadelphia, addressed the Washington County Medical Society, Washington, recently, on therapeutic fever.

Personal.—Brig. Gen. Matthew A. Delaney, commandant of Medical Field Service School, U. S. Army, Carlisle Barracks, received the honorary degree of doctor of science at the annual commencement of Dickinson College, Carlisle, June 10.——Dr. Royal H. McCutcheon, medical director of the state tuberculosis sanatorium at South Mountain, has resigned to engage in private practice at Bethlehem. Dr. Charles C. Custer, assistant director, was appointed to succeed Dr. McCutcheon.

Philadelphia

Outbreak of Typhoid Follows Picnic.—Twenty-seven persons who attended a picnic given by the Gross Post of the American Legion Memorial Day have developed typhoid, the New York *Times* reported June 27. The health department has undertaken to immunize the remainder of the 400 persons who are said to have attended the picnic. The source of the infection as yet has not been determined.

RHODE ISLAND

Society News.—The Providence Medical Association met with the New England Pediatric Society in Providence recently. Speakers were Drs. Dennett L. Richardson, on immunization against measles; Maurice Adelman, purpura as a complication of scarlet fever; and Murray S. Danforth, Legg-Calvé-Perthes' disease in children from 4 to 8 years old. Dr. Francis M. Rackemann, Boston, addressed the Providence Medical Association, June 3, on "Recent Advances in the Management of Asthma and Eczema."

SOUTH CAROLINA

State Medical Election.—Dr. Robert C. Bruce, Greenville, was named president-elect of the South Carolina Medical Association at the annual session in April, and Dr. Edgar A. Hines, Seneca, was reelected secretary for the twenty-sixth year. Dr. Samuel E. Harmon, Columbia, assumed the presidency for this year. The next annual session will be at Greenville.

SOUTH DAKOTA

Society News.—At the annual meeting of the South Dakota Academy of Ophthalmology and Otolaryngology in Pierre, recently, Dr. Ray A. Kelly, Mitchell, was chosen president; Dr. Anders E. Johnson, Watertown, vice president, and Dr. Howard L. Saylor, Huron, secretary.

TEXAS

State Medical Election.—Dr. Howard R. Dudgeon, Waco, was chosen president-elect of the Texas State Medical Association at the annual meeting in Dallas recently; Dr. John H. Burleson, San Antonio, was installed as president and Dr. Holman Taylor, Fort Worth, was reelected secretary. Next year's meeting will be held in Houston.

Special Societies Elect Officers.—Dr. Thomas B. Bass, Abilene, was elected president of the Texas Neurological Society at its annual meeting in Dallas in conjunction with the Texas State Medical Association in May. Dr. Ross B. Trigg, Fort Worth, was elected president of the Texas Railway Surgeons Association; Dr. Harry G. Walcott, Dallas, of the Texas Society of Gastro-Enterologists; Dr. Truman C. Terrell, Fort Worth, of the Texas State Pathological Society; Dr. Edward H. Schwab, Galveston, of the Texas State Heart Association; Dr. Jeffrey C. Michael, Houston, of the Texas Dermatological Society, and Dr. Caleb O. Terrell, Fort Worth, of the Texas Pediatric Society.

VIRGINIA

University News.—Dr. Harvey B. Stone, Baltimore, delivered the William W. Root Memorial Lecture of Alpha Omega Alpha at the University of Virginia Department of Medicine, Charlottesville, recently, on "Transplantation of Endocrine Gland Tissue in Mammals."

Officers of Specialty Society.—Dr. Emory Hill, Richmond, was elected president of the Virginia Society of Oto-Laryngology and Ophthalmology at its sixteenth annual meeting, in Fredericksburg recently. Other officers are Drs. Joseph Minor Holloway, Fredericksburg, vice president, and George G. Hankins, Newport News, secretary, reelected. The next meeting will be held in Richmond in May 1936.

Personal.—Dr. Albert B. McCreary, who has been a member of the staff of the health department of Memphis for several years, has been appointed to take charge of a district health unit in Virginia, with headquarters at Eastville.——The physicians of Martinsville and Henry County recently presented a cane to Dr. John W. Simmons, Martinsville, in honor of his completion of fifty years of medical practice. Dr. Simmons has been coroner of Henry County for many years.

WISCONSIN

Bill Passed.—A. 733 has passed the assembly, proposing to authorize the state medical society of Wisconsin, or any county medical society, in a manner approved by the state society, to "undertake and coordinate all sickness care of indigents and low income groups, through contracts with public officials, and with physicians and others, and by the use of contributions, cooperative funds and other means, provided only that free choice of physician within such contracts shall be retained and that responsibility of physician to patient and all other contract and tort relationships with patient shall remain as though the dealings were direct between physician and patient."

Society News.—Drs. Ernest M. Hammes, St. Paul, and Walter A. Fansler, Minneapolis, were guest speakers at the spring meeting of the Tenth District Medical Society at Rice Lake recently on "Differential Diagnosis Between Functional and Organic Neurologic Diseases" and "Injection Treatment of Hemorrhoids," respectively.——Dr. George H. Ewell, Madison, was elected president of the Wisconsin Urological Society at its spring meeting in Stevens Point recently. Speakers included Drs. Walter G. Sexton, Marshfield, on "Use of Concentrated Sodium Chloride Solution in the Control of Bleeding in Prostatic Resection"; Walter M. Kearns, Milwaukee, "Comparison of Results in Fifty Transurethral and Fifty Suprapubic Prostatectomies," and Erwin W. Exley, Minneapolis, "Replacement Lipomatosis of the Kidneys."——Dr. Jacob L. Bressler, Chicago, discussed "Orthoptic Treatment of Strabismus" before the Central Wisconsin Ophthalmological and Otolaryngological Society at Sheboygan, June 3.

GENERAL

Examinations in Obstetrics and Gynecology.—Of 113 candidates examined by the American Board of Obstetrics and Gynecology in Atlantic City, June 10-11, eighty-nine were approved for certification, twenty-two failed and two did not finish the examination.

Special Examination in Ophthalmology.—The American Board of Ophthalmology will hold an examination for certification in Cincinnati, September 17. Applications must be filed before July 15 with the secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

Hospital Association to Publish Journal.—The board of trustees of the American Hospital Association at its May meeting approved a plan to publish a monthly journal to be called *American Hospitals,* which will replace the present official *Bulletin* of the association. The first issue will appear January 1.

Society News.—Dr. Paluel J. Flagg, New York, was elected president of the Society for Prevention of Asphyxial Death at the annual meeting in Atlantic City, June 12, and Dr. Robert A. Wilson, Brooklyn, secretary.——The third Pan-American Red Cross Conference will be held in Rio de Janeiro, September 15-26; it was originally planned for October 20-31.——The next meeting of the Pacific Coast Society of Obstetrics and Gynecology will be held in Los Angeles, November 6-9.

Public Health Campaign.—A nation-wide campaign was launched, June 12, by the National Health Council to stimulate interest in community health on the part of the citizens and taxpayers, the New York *Times* announces. At the close of the drive in October, open town meetings will be held throughout the United States to discuss public health. It was stated that the campaign is an attempt "to promote such special objectives in these communities as the local health and social agencies might think most desirable" and to coordinate all health and social agencies.

Dr. Loeb Awarded the Phillips Prize.—Dr. Leo Loeb, since 1924 professor of pathology, Washington University School of Medicine, St. Louis, received the John Phillips Memorial Medal of the American College of Physicians at its annual session in Philadelphia, May 1. Dr. Loeb delivered the convocation oration on "The Thyroid-Stimulating Hormone of the Anterior Pituitary Gland." The medal, established in 1930 in honor of Dr. John Phillips, who lost his life in the Cleveland Clinic disaster in 1929, was awarded for the first time in 1932 to Dr. Oswald T. Avery of the Rockefeller Foundation and subsequently to Dr. William B. Castle of Harvard Medical School. The medals were presented to these men at the Philadelphia meeting. Officers elected are Drs. Ernest B. Bradley, Lexington, Ky., president-elect; Arthur R. Elliott, Chicago, David P. Barr, St. Louis, and Egerton L. Crispin, Los Angeles, vice presidents. Dr. James Alexander Miller, New York, was installed as president.

Medical Bills in Congress.—*Changes in Status:* S. 883 has been reported to the House, with amendment, directing the retirement of acting assistant surgeons of the United States Navy at the age of sixty-four years. (House Rept. No. 1388.) *Bills Introduced:* S. 3152, introduced by Senator Wagner, New York, proposes to provide compensation for disability or death resulting from injury to employees of interstate carriers. The bill provides that employers shall furnish employees medical, surgical, hospital service, etc., for accidental injuries arising out of and in the course of employment, the employers being given the right to choose the physician who renders treatment. The bill further provides that no claim for any service rendered to a claimant in respect of any claim or award of compensation shall be valid against the claimant unless approved by the deputy commissioner. S. 3153, introduced by Senator McNary, Oregon, proposes to provide pensions to veterans who served ninety days, in foreign service, under the jurisdiction of the Quartermaster General, Surgeon General of the United States Army, the Secretary of the Navy, or Marine Corps, during the Spanish-American War, including the Philippine Insurrection and the Chinese Boxer Rebellion. H. R. 8292, introduced by Representative Dorsey, Pennsylvania, proposes to establish certain rules for transporting dead human bodies in interstate commerce. The President is to be authorized to cause the Secretary of the Treasury to promulgate the rules and regulations set forth in the bill or to amend or change them as in his judgment may be in the interest of public health and welfare.

FOREIGN

Personal.—The Medical Society of London presented the Fothergillian Gold Medal to Sir George Newman at its annual meeting, May 13. Sir George retired in March as chief officer of the British Ministry of Health and of the board of education. The medal is awarded by the society every three years.——Dr. Wallace Ruddell Aykroyd, Dublin, has been appointed by the governing body of the Indian Research Fund Association director of nutritional research.

Lister Medal to Sir Robert Muir.—The Lister Medal for 1936 has been granted to Sir Robert Muir, professor of pathology, University of Glasgow, in recognition of distinguished contributions to surgical science. Sir Robert will deliver the Lister Memorial Lecture in 1936 at the Royal College of Surgeons of England. This is the fifth presentation of the award. A committee representing the Royal Society, the Royal College of Surgeons of England, the Royal College of Surgeons in Ireland, the University of Edinburgh and the University of Glasgow makes the selection.

Society News.—The International Society of Medical Hydrology will hold its annual meeting in Brussels, Belgium, October 12-17.——The International Union for the Scientific Investigation of Population Problems will meet in Berlin, August 26-September 1. The general secretary of the union is Capt. G. H. L. F. Pitt Rivers, London School of Economics, Houghton Street, London, W. C. 2.——The annual session of the Therapeutic Union, an international association founded in 1934, will take place October 9 at the University of Paris Faculty of Medicine. Among the subjects to be discussed are present knowledge of male hormones, surgery in arterial hypertension, and antimony compounds in therapeutics. Applications for membership may be sent to Dr. G. Leven, secretary, 24, rue Teheran, Paris (8).

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 8, 1935.

Laboratory Examinations for Insured Persons

A defect of the national health insurance system is the failure to provide specialist services. Dr. S. C. Dyke, honorary secretary to the Association of Clinical Pathologists, has addressed a memorandum to the *British Medical Journal* on laboratory examinations. He states that until comparatively recently medicine was practiced as an art but that it is now developing into a science, largely as the result of laboratory work, and specific treatment is available for a number of diseases. Examples are the uses of insulin, the antianemic principle of liver, and antitoxins. For the diagnosis of the diseases amenable to specific treatment, laboratory examinations are necessary, as in the diagnosis of pernicious from other forms of anemia. For lack of laboratory examination many cases of anemia not of the pernicious type are now uselessly treated with the antianemic principle, while others of that type are not diagnosed and do not get this treatment. Moreover, laboratory examination is necessary for correct dosage of the antianemic principle.

The insurance system makes no provision for any form of laboratory examination. The panel physician may prescribe whatever he thinks necessary, but he is given no facilities for ascertaining, in the first instance, whether his diagnosis is correct and, in the second, the response of his patient to treatment. Representations have from time to time been made to the government by the British Medical Association and other bodies urging that modern methods of diagnosis and treatment made available by the laboratory should be at the disposal of the insurance system, but so far without avail. In certain districts they have been made available by means of loopholes in the insurance acts, and for the reason that unallocated funds were available. In other districts "the more active and intelligent practitioners" send patients to the voluntary hospitals for laboratory investigations, for which the hospitals receive no remuneration. The Association of Clinical Pathologists has for some years been urging the inclusion of laboratory examinations as a benefit under the insurance acts. It has drawn up a schedule of charges at which these can be performed without loss to the laboratories and this schedule has been adopted by the British Medical Association. The Association of Clinical Pathologists holds that clinical pathology can be properly carried out only in laboratories by pathologists attached to general hospitals. The hospital laboratories are the obvious centers for this work.

Precautions as to the Sale of Poisons

More stringent precautions in regard to poisons are urged in the report of the Poisons Board, just issued. Many fatalities, it is said, would be avoided if greater precautions were taken by the public in the keeping of poisons, particularly if it became the practice in every home for articles labeled "Poison" or "Caution" to be kept together in one place, preferably under lock and key, away from other articles and out of the reach of children. A liquid poison should never be kept in an ordinary bottle, as it frequently is, but only in the bottle in which it has been bought. Poisons should always be labeled with an appropriate warning. The board proposes that the labeling provisions of the Poisons Act should be applied at every stage of distribution from the manufacturer downward. A type of bottle fluted vertically is suggested for liquid poisons other than those for internal use. In the case of particularly dangerous poisons no person, whether wholesaler or retailer, should be permitted to sell poisons to persons not known to him to be those to whom the poisons may properly be sold. The fact that the purchaser says that he requires a poison to sell again or for the purpose of his trade or business is not sufficient to justify the sale to him with "no questions asked." In regard to drugs that can be sold only on a physician's prescription, the board recommends that the prescription should not be dispensed more than once unless the prescriber specially authorizes it.

"Broken Bones and Wasted Money"

In a previous letter (THE JOURNAL, March 16, p. 934) the report of an expert committee appointed by the British Medical Association to report on the treatment of fractures was reviewed. The committee found that in consequence of want of organization the results were bad and the period of disability much prolonged. At a meeting of the National Safety First Congress, Mr. E. W. Hey Groves, emeritus professor of surgery in the University of Bristol, read a paper on "Broken Bones and Wasted Money" in which he enforced the same lesson and advocated the organized treatment of fractures. He said that more than 150,000 cases of fracture occurred every year and that of these 100,000 were not treated in any organized clinic. To avoid all the muddle and inefficiency it was not necessary to provide a large special hospital devoted to accidents. There were three principles to be followed: unity of control, continuity of treatment and an efficient follow up. All the fractures that came to a hospital should be under the control of a fracture service having at least three surgeons. This team would involve the payment of salaries between $1,250 and $5,000 in addition to those paid to house surgeons at present. It would be a perfectly just arrangement if the insurance companies paid for the entire cost of the treatment of accidents. If they did, it was obviously in their interest to bring about such organization in the treatment of fractures as would involve unnecessary waste.

The Prevention of Automobile Accidents

The minister of transport stated in the House of Commons that in London, where the safety measures had been chiefly concentrated, there had been a reduction of 31 per cent in the number of killed and of 16 per cent in the number of injured during the last eleven weeks, as compared with the corresponding period of last year. The corresponding reductions for the country as a whole were 16 and 11.5 per cent. Of 3,517 pedestrians killed on the roads in 1933 no fewer than 1,171, or one third, were children under the age of 15 years. Many of the accidents were due to the lack of playing grounds. He had decided on the immediate closing of certain London streets to automobile traffic except when proceeding to premises in those streets. The intensity of the campaign for road safety had not in any way checked the rapid extension of automobile traffic. At the end of February there were 224,000 more vehicles licensed than at the corresponding date in 1934 and 441,000 more than at the same period in 1931. Considerable progress had been made in the provision of nonskid surfaces. Much experimental work was being done in the attempt to produce a surface material that would remain nonskid for at least five years.

A Health Club for the Family

In Peckham, a district of South London, there has been established a medicosocial institution, which is of a quite new type even in this age of so much health organization. Three years ago, operations were begun by inviting families in the neighborhood to join a family club at a subscription of 12 cents a week per family. They were offered in return a periodic medical examination but no treatment. If and when necessary a note with the diagnosis was given the member for the family physician or for hospital treatment. In addition, members had the use of the club daily from 2 to 10 p. m. for social purposes. The experiment was so successful that it has been transferred to a much larger building, standing in a large area of grounds, designed for the purpose. This is neither a commercial venture

nor a charitable institution. It is in charge of two physicians who have made a special study of family health and who will be aided by voluntary workers.

The subscription is now 24 cents a week for each family, but much more is offered than the periodic examination—a swimming pool, gymnasium, boxing and dancing halls, cafeteria and library. There will also be a crèche, with room for perambulators, sewing machine room, a social club for mothers, garden space for games, infant solarium, lecture rooms and reading cubicles. The building has been designed for 2,000 families, and with a calculated revenue of $50,000 it is thought that the cost of the building will be paid in thirty-five years. It is claimed that a periodic examination by the same physician results in a saving of 90 per cent of the serious cases among his patients. The unit of membership is the family as a whole, for it is held as a fundamental principle that physicians can only thus hope to acquire a full knowledge of the health of the individual.

Center of British Ophthalmology

The Royal London Ophthalmic Hospital—better known by its former name of Moorfields Hospital—is the largest eye hospital in the world and has long been famous as the center of British ophthalmology. The influence of its postgraduate teaching is world wide, and the great ophthalmic hospitals of India have been founded by men trained in it. Patients are attracted to it from all parts of the world. The hospital deals annually with 3,000 inpatients and more than 50,000 outpatients, for which the working space became insufficient. A new outpatient department, which covers three-fourths acre, has been added and is equipped in the most modern way. There is an orthoptic department for the treatment of squint by nonoperative methods and a physical therapeutic department for treatment with ultraviolet rays. In the pathologic department is a valuable museum and an ophthalmologic library of 5,000 volumes, the most complete in the world.

PARIS

(From Our Regular Correspondent)

May 25, 1935.

The New Cancer Institute of Paris

The striking feature about the new center for the treatment of malignant neoplasms is that there has been no effort made to avoid using the term "cancer" in designating the function of the new institute just opened in a suburb of Paris. The director is the pathologist Prof. Gustave Roussy. To all those familiar with his work this wise selection means efficiency in the full sense of the term.

The chief object was to concentrate, in close proximity to one another and under a single director, all activities pertaining to the diagnosis, treatment and research problems of neoplasms.

The buildings are in two groups, the laboratory under the supervision of the pathology department of the medical school, of which Professor Roussy is the head and also dean of the school. The second group is a series of hospital wards and private rooms, containing a total of 156 beds. In the main building, recently opened, are large consulting rooms for the outpatient service, treatment rooms for high voltage roentgen therapy and for curietherapy. The apparatus for the former method of treatment has a capacity of 300,000 volts and is in charge of Dr. M. J. Belot. The installation complies with all the requirements of modern technic. The service of curietherapy is under the direction of Mme. Simone Laborde, assisted by Y. L. Wickham and Mme. Liberson and has at its disposal 7 Gm. of radium.

The six laboratories for diagnosis and research are in charge of competent cancrologists. Every known resource can be employed in this new cancer institute to combat the diseases for which it was founded.

Congenital Tuberculosis

At the meeting of the Pediatric Society, Nov. 30, 1934, an apparently authentic case of congenital tuberculosis was reported by Grenet and his associates. A woman, aged 36, in the eighth month of pregnancy who was admitted to the hospital, complained of severe headache. Soon afterward the clinical picture was that of a tuberculous meningitis.

A vaginal cesarean operation was performed and a living child weighing 2,600 Gm. was delivered. The mother died ten days after admission to the hospital.

The autopsy revealed a tuberculous meningitis and a bilateral pulmonary tuberculosis.

The infant was separated from the mother immediately after its birth and given by mouth the B C G vaccine, on the second, fifth and seventh days after birth. Sulpharsphenamine was also given, beginning the seventeenth day, because there was a history of maternal and paternal syphilis. Symptoms of enterocolitis appeared seven weeks after birth and râles over both lungs; a large liver and spleen were found. The child died at the age of 2 months.

The autopsy revealed a generalized tuberculosis and many typical tubercle bacilli were found in the lesions. The lungs, spleen, liver and kidneys presented a large number of miliary nodules, which showed on microscopic examination typical tubercles with giant cells. Guinea-pig inoculations from the mesenteric lymph nodes and spleen were positive. The organism found was the human type of tubercle bacillus. The placenta was not examined, but the authors believe that there can be no question that infection of the fetus took place through the placental circulation.

A Report on Arteriography

At the April 10 meeting of the Société de chirurgie, dos Santos reported his experiences with 852 cases during the six years ended January 1935. Of these injections of an opaque medium, 431 were made into the aorta and 421 into the arteries of the extremities. His paper was limited to the latter. The only accident in a total of 1,500 injections into peripheral arteries occurred in 1928 during an injection of the femoral artery with sodium iodide. On account of a hematoma, which increased constantly in size, it became necessary to ligate the vessel. Recovery without gangrene took place. Puncture of an artery may be followed by vascular spasm, especially in the upper extremity in younger individuals. It is necessary to avoid injecting the opaque medium into the tissues around the artery, to avoid gangrene of the periarterial structures. The injection should never be made with any force, because it is this excess of pressure which entails vasomotor spasm. In the case of the arteries of the upper extremities it is advisable to expose them before injecting. In 129 arteriographies with iodine preparations, an increased degree of gangrene was seen in six cases. In 300 arteriographies in which thorium dioxide sol was used, no local accident has been seen, even in cases of gangrene, arteritis or aneurysm. Generalized symptoms, large hematoma in the anal region, hematemesis, marked anemia and delayed coagulation time were observed in one case, but recovery followed after injection of calcium and blood transfusion.

There have been no deaths in any of the cases in which arteriography of the extremities was done.

He quoted other authors (American and European), whose experience, added to his own, constitutes a total of 1,300 arteriographies without any mortality. Arteriography is especially indicated before operations for arterial or arteriovenous aneurysms and for aneurysms of the peripheral vessels. In spite of the unfortunate accident reported by Leveuf of gangrene following arteriography in a case of Volkmann's contracture, dos Santos used the method successfully in five such cases. In four of these the information yielded by the method in Volkmann's contracture was of great value.

Legal versus Illegal Abortions

At the request of the minister of public health, a committee, of which Professor Brindeau was chairman, has been appointed by the Academy of Medicine, and the committee has just submitted its report. Illegal abortion should be discouraged because it plays an important part in depopulating a country. The majority of abortions in France are not seen by medical men. Patients are sent to hospitals when there is a complication, so that the number observed there are only a small portion of the total number. Professional secrecy plays a rôle because it prevents notice being given to the authorities. In a report made by a number of Russian gynecologists in 1927 covering a period of six and a half years, it was stated that the number of illegal abortions had increased in spite of legalizing abortion in that country.

Discussion of the report of Professor Brindeau took place at the academy April 2. Bar pointed out that it had been stated that the underlying motive of the Russian law legalizing abortion had been to combat secret operations. He thought that such a motive was secondary, whereas the primary one was to find an excuse to check the abnormally high birth rate; furthermore to give a woman the right to decide whether pregnancy was desired, and finally the rights of the state to determine whether or not more children were wanted. The only condition under which the prospective mother would be likely to wish to terminate the pregnancy would be on account of economic conditions. A commission of three had been appointed in Russia to determine whether pregnancy in the individual case should be interrupted or not. One member was a woman physician, a second a representative of the ministry of public health and the third an official who looked into the economic conditions of the case. The enormous increase in the number of legalized abortions in Russia shows that the commissions have not been very severe in considering the reasons presented by women to terminate the pregnancies. Even if the commission decides against a legalized abortion, the applicant has recourse to appeal. In order to diminish the risks of a legalized abortion, a limit of three months of pregnancy was adopted. The number of legalized abortions has risen from about 8,000 in 1922 to nearly 32,000 in 1926 in Moscow alone. Bar believes that Brindeau's report, which pointed out the dangers of abortion and advised against the adoption of legalized abortion in France, was to be endorsed in every particular.

Damage Suit for Death Following Arteriography

The active discussion that has been taking place at the Société de chirurgie regarding the merits and dangers of arteriography has been frequently referred to. The method was first proposed by dos Santos of Lisbon, Portugal, and consists in injecting a radiopaque solution directly into an artery to determine changes in the vessel wall and the level of blocking of the lumen in cases of thrombo-angiitis obliterans, arteriosclerosis and similar conditions. A recent decision in one of the courts of Paris awarding damages of 100,000 francs (about $7,000) has called attention to the dangers of arteriography and the possible liability incurred by public hospitals and their staffs when an accident occurs in using such a diagnostic procedure. Prof. Camille Lian, a Paris internist, had under observation an ambulatory patient in his clinic, an elderly man suffering from intermittent claudication of the left leg for a year preceding the arteriography. To determine more accurately the vessel changes in this patient, Professor Lian sent for him in order to employ arteriography. The opaque medium used in this case contained thorium salts in colloidal solution. Immediately after the injection into the right femoral artery, the patient experienced such severe pain in the right limb that hospitalization was necessary. The following day, marked pallor of the right foot and a bluish discoloration of the calf of the limb were noted. Gangrene occurred five days later, so that amputation of the right limb below the knee became unavoidable. The patient died twenty-three days after the right arteriography.

The necropsy revealed a marked narrowing of the femoral artery of the left side, the injection having been made into the femoral artery of the right limb. At the point of narrowing of this left femoral artery, the lumen was still permeable. At the site of injection into the right femoral artery, the vessel was occluded by a thrombus. Professor Lian's defense against the damages claimed by the relatives of the patient was that the gangrene was not due to the injection but was the result of the arteritis for which relief had been sought a year before. The court stated that an untried diagnostic method had been employed, the potential dangers of which had not been sufficiently explained to the patient. In asking the latter to come back to the outpatient department, no mention had been made that arteriography was to be employed; only a radiography had been referred to in the letter to the patient. Although the injection had been made by two assistants who had a relatively large experience in arteriography, the court held that Professor Lian was the only one responsible for the death following the arteriography and must pay the entire damages to the family.

International Congress of Legal and Social Medicine

The twentieth annual meeting of the International Congress of Legal and Social Medicine will be held in Brussels from the 17th to the 20th of July. The subjects to be discussed include conflicting medical testimony, characteristics of wounds made during life or after death, postoperative complications of amputations, traumatic necroses, traumatic psychoses, and the relation of legal and social medicine. Information may be obtained from M. de Laet, 115 Boulevard de Waterloo, Brussels.

Seventh International Congress of Industrial Medicine

The seventh International Congress of Industrial Medicine will be held in Brussels, July 20 to 26. The subjects to be discussed will be end results of skull fractures, injuries of the hand, effects of dust in industrial occupations, pathologic action of gases escaping in coal mines, and lesions due to electricity.

Eighth International Congress of Military Medicine and Pharmacy

The following questions assigned for study at the seventh Congress of Military Medicine and Pharmacy, held in Madrid, will be taken up at the eighth congress at the Brussels meeting, to be held June 27 to July 3: principles of organization and functioning of medical services in mountainous countries, determination of aptitude of soldiers for various service branches, end results of abdominal injuries, standardization of methods of analysis of foods for soldiers, and distribution of various health services.

Death of Professor Morax

The ophthalmologist Professor Morax died in May. Although born in Switzerland, he began his medical studies in France, becoming early in his career an assistant at the Pasteur Institute, where his research work was done on the diplobacillus of subacute conjunctivitis (bacillus of Morax). Up to the time of his retirement from active practice, he continued to direct laboratory work at the Pasteur Institute.

Morax was the first to be appointed in charge of a special eye service, in the Hôpital Lariboisière, one of the free hospitals, where he worked for twenty-five years up to the time of his retirement in 1929. His courses in English have been attended by many Americans. During the World War his service became the ophthalmologic center for the French army. His contributions to the literature of his specialty have been recognized as of the highest merit. He was regarded as one of the greatest authorities on infections of the eye and of the conjunctiva. In 1923 he founded a society to study the prevention of trachoma, a disease in which he was particularly interested.

Bone Production from Transplanted Bladder Mucosa

Professor Gosset reported the experimental work of two of his associates, G. Loewy and I. Bertrand, at the meeting, Dec. 5, 1934, of the Société de chirurgie. Forty-two transplants of various tissues were carried out on twenty-two dogs. In thirteen autotransplants of the epithelial lining of the bladder, the ureter or the renal pelvis, bone formation occurred in all the experiments. In seven experiments, homotransplants (from dog to dog) were used. The grafts were not composed of living tissue, having been placed in 60 per cent alcohol. No bone formation followed in any of the seven dogs. In eight experiments, living tissue of the urinary tract was transplanted from dog to dog without any resulting bone formation. Eight autotransplants of living epithelial lining of the gallbladder also failed to develop bone. The same was true of living autografts taken from the epithelial lining of the stomach and small intestine, as well as autografts taken from the liver, pancreas and spleen.

These experiments explain the relative frequency of bone formation in the scars following cystotomy.

BERLIN

(From Our Regular Correspondent)

April 29, 1935.

Measures to Combat Tuberculosis

The campaign against tuberculosis had until recently been left to the krankenkassen, the social insurance carriers, and the welfare bureaus—and, in addition, to the tuberculosis relief centers, which are designed to ferret out all open cases of tuberculosis. Now the Nationalsozialistische Volkswohlfahrt, commonly called the NSV, has turned its attention to tuberculosis, influenced by the observation that the number of tuberculosis patients is so great that the aforementioned organizations are unable to care for all of them. It is estimated that 2 per cent of the population of Germany—about 1,320,000 persons—are affected with unarrested tuberculosis and that from 0.5 to 0.7 per cent, or about 400,000 persons, have open tuberculosis.

In Germany's previous organization for the combating of tuberculosis there were many defects. There are numerous small industrialists, artisans, farmers and representatives of the liberal professions who are not insured and who have not sufficient means to pay for an adequate course of treatment. Then, too, the insurance carriers frequently refuse to grant funds for a course of treatment if there is no prospect of the patient becoming able to earn his living. After treatment and restoration of earning capacity, a patient often returns to an environment in which he very soon falls a prey to a new infection.

The NSV seeks not only to effect a cure of the individual patient but endeavors to eliminate also the sources of infection; that is, it attempts to ferret out those cases which are not likely to be discovered by any other agency and cases in which funds are not granted by the insurance carriers. If another welfare organization has refused to sponsor a course of treatment, it will make an investigation and, if conditions warrant, will endeavor to induce the organization to reconsider its decision, offering at times to share the cost of treatment. The NSV will usually arrange for treatment in a sanatorium if the patient has any prospect of recovering. The organization not only interests itself in the patient himself but also in his family. If the patient must travel to a more distant place for treatment, it will, if necessary, provide clothing and traveling necessaries. During the patient's absence, the NSV looks after his family. Along with this aid of a pecuniary nature, there will be an extensive educational program, accompanied by lectures. It is hoped that, by the end of the year, all the German districts may be reached.

Likewise the federal league of German officials—the RDB—has created a welfare department for the aid of tuberculous persons, which is managed in the following manner: The confidential secretaries of the local and district groups of the RDB are under obligations to introduce all colleagues in whose families there is tuberculous disease or a suspicion of tuberculosis to the relief center for tuberculous patients or to a specialist for tuberculosis. The organization of prophylactic, curative or protective measures rests exclusively with the relief center or the tuberculosis specialist. The confidential secretary must see to it that the physician's orders are carried out. If difficulties arise, he must inform the social worker concerning the matter. If the prophylactic, curative and protective measures require an outlay of money, the confidential secretary will do his utmost to procure for his colleague the funds from the krankenkassen or other organization. Not until all these possibilities have been exhausted is the question to be raised as to whether and to what extent an allocation of aid by the RDB is desirable and feasible.

The Need of Midwives

According to recent statistics, of 956,000 births occurring in Germany in 1933, about 800,000 were in charge of midwives. For the year 1934 the number of births in charge of midwives is placed at 850,000. If one figures an average of fifty confinements a year for each midwife, there must have been about 17,000 midwives in active practice in Germany in 1934. These are merely estimates; the distribution of midwives in Germany is not uniform. There are regions with from eighty to 100 confinements to each midwife, as compared with others in which every village with no more than ten births a year has a trained midwife. Assuming that the average period of active service for a midwife is thirty-five years, it may be estimated, on the basis of the figures for 1934, that about 500 midwives should be graduated every year. Taking this estimate as a basis, from 7,000 to 8,000 more midwives than are needed have been trained. The situation is further clarified by the fact that, in 1934, 1,180 midwives were newly registered, while 1,150 more were pursuing a course of training. Hence, demands for the application of government control measures to this profession as well are being heard. The minister of the interior has, therefore, limited the number of pupils in the midwifery training schools to from 300 to 400. This number is considered adequate in view of the existing total of approximately 25,000 midwives.

The Notifiable Diseases in 1934

The trend of the notifiable diseases in the German reich in 1934 was not uniform. While not a single case of such diseases as typhus fever, leprosy, smallpox or relapsing fever was reported, the official statistics reveal an increase of infectious diseases of children. Diphtheria showed the greatest increase; for the first time since the war, more than 100,000 cases having been notified in one year. Scarlet fever presented so many cases (particularly during the last quarter) that great anxiety has been felt. Epidemic poliomyelitis was kept fairly within normal limits, with a total of 1,700 cases. Typhoid presented a low morbidity in 1933 and 1934. The total number of cases of diphtheria in 1934 was 113,936, as compared with 74,559 in 1933 (THE JOURNAL, May 12, 1934, p. 1625). The number of deaths increased from 3,628 in 1933 to 4,799 in 1934. The morbidity from scarlet fever rose from 76,749 cases, with 546 deaths in 1933, to 110,706 cases, with 789 deaths, in 1934. The case mortality remained in 1934 at the low level established in 1933 (0.71 per cent). The total number of cases of epidemic meningitis was 1,015, which is the highest record for any year since the war. The total number of deaths was 423 (42 per cent mortality), as compared with a mortality of 47 per cent in 1933. Poliomyelitis was represented by 1,700 cases, as against 1,249 cases in 1933 and 3,733 cases in 1932. The mortality for 1934 was comparatively favorable (8.9 per cent; 10.5 per cent

in 1933). No estimate of the possible favorable effects of serotherapy can be made from the figures. There were 128 bite injuries inflicted supposedly by animals suffering from hydrophobia. There was one death, which is not essentially different from the mortality of recent years. Anthrax declined further in 1934 (seventy-six cases as against eighty-three in 1933), although the mortality was higher (fourteen deaths; ten in 1933). The cases of puerperal fever rose from 4,826 in 1933 to 5,886 in 1934. It must be considered, however, that there was a marked increase in the birth rate. The increase in the number of births was proportionately greater than the increase in the number of cases of puerperal fever, the former increase being doubtless due to the decrease in the number of criminal abortions. The new cases of trachoma declined from 866 in 1933 to 728 in 1934.

Importance attaches to the statistics on pulmonary tuberculosis. In 1934 Prussia reported 41,579 new cases and 21,298 deaths. A comparison with the averages for the past ten years reveals a steady improvement. Epidemiologic developments in the morbidity of tuberculosis of the respiratory organs are especially pleasing, because tuberculosis demands annually more victims than all the other infectious diseases taken together.

Government Aid to Married Couples

According to recently published figures, the German reich had made, up to 1934, a total of 366,178 loans to newly married couples (THE JOURNAL, April 21, 1934, p. 1315). During the same period, a total of 143,571 living children were born to couples who received loans with which to finance their marriage.

In the second half of 1934, the number of marriages was 131,000 greater than in the second half of 1932, although for the former period only 89,680 loans were made. At least one third of the increase in marriages during the period mentioned was due to the stabilization of political and economic conditions. In the fourth quarter of 1933 more than half (52.9 per cent) received marriage loans; in the fourth quarter of 1934 only a fifth (20.3 per cent). In the first quarter of 1934 the number of children resulting from marriages made possible by the aid of federal loans amounted to 86.5 per cent of the whole birth increase; in the second quarter only 59.5 per cent, and in the fourth quarter about half. These facts point to an increased interest in marriage and a greater willingness to have children, which are manifest independent of marriage loans.

NETHERLANDS

(From Our Regular Correspondent)

May 7, 1935.

Reeducation of Handicapped Persons

An interesting article by J. Kastelein, special agent of the Rijksverzekeringsbank, gives a detailed account of what can be accomplished through reeducation of handicapped persons. The four chief factors to be taken into account are (1) the nature and the extent of the infirmity, (2) the occupation, (3) the patient's age, degree of intelligence and attitude toward work, and (4) the chances of finding in his new employment adequate means of subsistence.

Of the 307 requests received, twenty were withdrawn and 126 were refused. One hundred and sixty-one, or 52.5 per cent, of the petitions were granted. Thirty-seven cases of reeducation were abandoned, four at the request of the patients and nine for other reasons. Something more than half of the 52.5 per cent of the accepted cases, or about 25 per cent of the total number of requests for instruction, were crowned with success. Most of the cases abandoned by the management were due to lack of interest on the part of the candidates, to insufficient progress or to bad conduct. Some wounded or injured workmen have no desire to learn a new trade; others cannot accustom themselves to a new environment. The average duration of the reeducation process (after the injury) is three years and six months. One fifth of the persons were able to resume their usual occupation after completed reeducation. The author gives the distribution of the cases among the provinces of the Netherlands. The largest number of cases of reeducation were found in the province of Overijssel, whereas in the province of Utrecht not a single case turned out satisfactorily.

The Population of the Dutch East Indies

The European group of the population of the Dutch East Indies numbers 240,417, or about 0.4 per cent of the total population. The favorable economic conditions in the Indies have enabled Europeans to marry and to bring their wives to their new home. Hence the number of women residing permanently in the Indies has increased. Fifty-four per cent of the Europeans live in the cities in spite of the increasing number of industrial and agricultural enterprises established in the country. Seventy per cent of the Europeans residing in the Indies were born there. Twenty-one per cent were born in the Netherlands. The percentages from various other countries are small. About 8,000 European children born in the Indies are sent to Europe to complete their education.

Leaving the army out of the count, there were scarcely 2,000 Europeans in Java and Madoera in 1814; in 1823, about 6,000; in 1836, 11,345; in 1845, 16,270. The population doubled between 1860 and 1900. Between 1900 and 1930 it increased two and one-half times. During the past ten years the number of marriages has likewise increased. The number of births is small: 163 per thousand households. Two per cent of adult European males and 7 per cent of the women are illiterate. The principal cause is the fact that school attendance (or private instruction) is not compulsory. As to the religious beliefs of the population, there are 1,000 Jews, 1,400 Mohammedans, 120,000 Protestants, 77,000 Catholics, 8,500 Asiatics (many of them Buddhists), 17,000 with no religion, and 18,000 whose religion is unknown.

Ultraviolet Rays in the Treatment of Leprosy

About four years ago Dr. Denis Mulder, director of a radiologic institute in the Dutch East Indies, after effecting in three years the cure of a leprous person with the aid of ultraviolet rays, called attention to this mode of treatment. Following his report, funds raised through the generosity of private donors were devoted to the application of the method on a large scale (in the colony of Pelantoengan), but the scientific control of the trials was not sufficient to justify the formation of any final opinion on the value of the method. Later, the government of the Dutch East Indies commissioned Dr. P. H. J. Lampe to render a report on the subject, which has now been published. The report merely recalls the first evidences of success and emphasizes the impossibility of drawing any final conclusions as yet. Further trials have been undertaken in various leprosariums under the direction of the public health service.

B C G Vaccination

Mr. Heynsius van der Berg, the director of the Netherlands society for the combating of tuberculosis, has given an account of the results of B C G vaccination in the Netherlands. He incorporated his account in his course on tuberculosis, delivered at the University of Amsterdam. Excerpts from his survey follow:

Over a period of eight and a half years, the B C G vaccine has been administered to 1,100 infants. No harmful effects have been observed. The vaccine is applied soon after the birth of the child. During the first ten days a dose of 10 mg. of vaccine, corresponding to 400 million living tubercle bacilli, is ingested by the digestive tract, fasting. The mortality from tuberculosis in children under 1 year of age ranges between 2.7 and 8 per cent for unvaccinated children and between 1.1 and 2.2 per cent for B C G children. During the first two years the mortality rates for the unvaccinated and the vaccinated were from 3.8 to 18 per cent for the former and from 1.3

to 2.7 per cent for the latter. The general result is very satisfactory; but he points out that, in spite of vaccination, a number of B C G children become affected with tuberculosis, of slow evolution, but if it is malignant the children die. The prognosis for the first year for unvaccinated infected children appears to be bad; from 5.4 to 51.5 per cent died from tuberculosis. The mortality among the B C G children ranged between 2.8 and 5.8 per cent. This great difference of from 8.8 to 45.7 per cent indicates that the B C G children have a greater resistance to infection with virulent tuberculosis bacilli than the unvaccinated children.

The statistics of the Netherlands tuberculosis service took account of the danger of contagion to which the children are exposed after vaccination. This factor is often neglected in the statistics of other services published heretofore, although important for purposes of comparison.

ITALY

(From Our Regular Correspondent)

April 15, 1935.

Sunlight and Skin Reactions to Tuberculin

Luzzatti of Novara has made an extensive study of the influence exerted by sunlight on skin reactions to tuberculin. On the basis of results secured by the Società di cultura medica of Novara and tuberculin skin tests performed on children who were in a colony for heliotherapy, he affirms that the life in the open air and the prudent exposure to the sun's rays increase the skin reaction to tuberculin and may render exudative the proliferative reaction. The positive skin reaction is more frequent in females (37.5 per cent) than in males (17.9 per cent). Positive reactions are often found in subjects with a positive familial anamnesis. Tuberculous allergy results from factors external to the individual and is increased by a sojourn in a colony for heliotherapy. In such colonies, skin tests applied to children may indicate the limits for the exposure to climatic stimuli. Colonies in which the amount of stimulation is not such as to produce anergy but rather a highly allergic state is brought about in children may be regarded as exerting a specific influence in the crusade against tuberculosis.

The Medical Association of Trieste

The Medical Association of Trieste met recently under the chairmanship of Professor Ravasini. Professor Nasso, director of the pediatric clinic of the University of Milan, spoke on the clinical observations and results of research on diphtheria. Since 1926 in almost all the countries of Europe there has been a reduction of the morbidity and mortality from diphtheria. The speaker sought to explain the causes of this reduction and called attention to the importance of predisposing factors of a climatic and meteorological nature, the influence of which on the epidemiology of diphtheria is becoming more evident. Professor Nasso refuted the statements of those who cast doubts on the efficacy of serotherapy because of the therapeutic failures recently observed in specially malignant cases. He emphasized the need of more widespread prophylactic vaccinations with anatoxin to reduce to a minimum the receptivity to the disease.

Marcovich explained a new method of research in diseases of the peripheral arteries. Although the speaker affirmed the great sensitiveness of thermo-oscillometry, which enables one to detect lesions in limbs apparently sound, he denied the assertion that this means of research made it possible to distinguish between the various disorders, and he emphasized particularly that it has no value in differentiating prevailingly nervous lesions of the limbs.

Macchioro reported the results of his research on patients with diabetes mellitus to determine the possible relationships between the external and internal secretions of the pancreas. In twelve patients he studied the behavior of the glycemic curve and of the diastase content of the blood and the urine, using substances with a pharmacodynamic action and also other substances, such as hydrochloric acid and dextrose administered by the oral and the intravenous routes. He affirmed that the existence of a true and proper correlation between the esocrine and the endocrine secretion of the pancreas cannot be asserted.

Diphtheric Paralysis

Prof. Cesare Cocchi, pediatrician of the University of Florence, has presented to the Accademia medico-fisica of Florence a hypothesis, supported by anatomic and physiologic data, that would explain why, in all persons affected with diphtheric paralysis, and particularly in children, paralysis of accommodation is present. According to Cocchi, a selectivity of the toxin for the nucleus of the oculomotor nerve is not involved but rather a mechanism of different action. The function of accommodation is associated with two antagonistic systems, one neuromuscular and the other connectivo-elastic, and since the diphtheric toxin acts in a selective manner on the neuromuscular system, the speaker holds that the evidences of involvement of the nervous system are seen primarily and with greater frequence in the accommodation system, in which only one of the antagonistic systems is neuromuscular. When, however, there are two systems with opposite action but both neuromuscular, the toxin acts in equal measure on both and the external clinical effects are wanting or are revealed with minor intensity, for, although there is paralysis, the functional equilibrium will not be lacking.

Prof. Gaetano Corrado

The death of Prof. Gaetano Corrado, emeritus professor of legal medicine at the University of Naples and one of the prime movers in restoring forensic medicine to its former place of dignity and importance, is announced. His researches concern examination of the sternum for the determination of the age of the fetus and the new-born; the principal nuclei of ossification that may be found at the time of birth; the spectroscopy of living and dead tissues and its application to the study of certain forms of poisoning; also the examination of the nerve cells in death due to electricity; mummification, and various matters in the field of teratology. He was twice president of the faculty of medicine of Naples and had served as president of the Academy of Medicosurgical Sciences. He founded a museum of legal medicine, which contains various collections and some specimens of exceptional importance.

Marriages

ROBERT SHERMAN BALDWIN, Marshfield, Wis., to DR. ELIZABETH ALICE REDDEMAN of Milwaukee, June 1.

MYER J. GROSSMAN, Goshen, N. H., to Miss Charlotte Zeltzerman of Dorchester, Mass., June 16.

STILES DEAN EZELL, Middletown, N. Y., to Miss Jane Manewal of Bessemer, Pa., June 18.

WILLIAM HARVEY HANKS, Greenwood, Del., to Miss Kathryn Phillips of Georgetown, April 13.

ZEPH J. R. HOLLENBECK, Columbus, Ohio, to Miss Elizabeth R. Jones of Jackson, June 15.

A. BROMLEY YORK to Miss Bertha Hutchinson, both of Huntington, W. Va., May 2.

GUY SYDNEY MCCLELLAN to Miss Lucy Dell Leathers, both of Nashville, Tenn., June 4.

JOHN R. SWAN to Miss Mary Esther Hughes, both of Indianapolis, June 15.

WILMOT BROWN ALLEN to Mrs. Mary Fant Williams, both of New York, June 19.

JOSEPH E. MOTT to Miss Eileen C. McManus, both of Paterson, N. J., June 5.

Deaths

Charles Russell Bardeen ✠ Madison, Wis.; Johns Hopkins University School of Medicine, Baltimore, 1897; since 1904 professor of anatomy and since 1907 dean, University of Wisconsin Medical School, where he developed the preceptor system; assistant in anatomy 1897-1899, associate 1899-1901, and associate professor 1901-1904, at his alma mater; member of the Committee on Central Scientific Exhibit of the American Medical Association since 1927; member of the American Association of Anatomists and the Wisconsin Academy of Science; a frequent contributor to anatomic journals; aged 64; died, June 12, of carcinoma.

Clifton Brooks Willmott ✠ Louisville, Ky.; Kentucky University Medical Department, Louisville, 1904; associate clinical professor of dermatology and syphilology, University of Louisville School of Medicine; served during the World War; on the staffs of the City Hospital, Children's Free Hospital, SS. Mary and Elizabeth Hospital and the Kosair Crippled Children Hospital; aged 55; died, May 18, in St. Anthony's Hospital, of intestinal hemorrhage.

Frederick Epplen ✠ Seattle; Rush Medical College, Chicago, 1906; fellow of the American College of Physicians; member of the House of Delegates of the American Medical Association, 1923-1924 and 1928-1929; formerly secretary of the Pacific Northwest Medical Association; at one time chief of the pathology department of the King County Hospital, Seattle; aged 55; died, May 25, of angina pectoris and arteriosclerosis.

George Paul Sandrock ✠ Major, M. C., U. S. Army, Carlisle, Pa.; Chicago College of Medicine and Surgery, 1916; served during the World War; entered the medical corps of the U. S. Army in 1920, was promoted to captain in 1922 and in 1931 to major; aged 45; died, June 2, in the Walter Reed General Hospital, Washington, D. C., of embolism, following an operation for perforated duodenal ulcer.

Robert Paine ✠ Memphis, Tenn.; Jefferson Medical College of Philadelphia, 1917; member of the Radiological Society of North America; instructor in roentgenology, University of Tennessee College of Medicine; served during the World War; aged 42; on the staffs of the Memphis General Hospital and the Methodist Hospital, where he died, May 26, of lobar pneumonia.

John Gabriel O'Malley, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; member of the Illinois State Medical Society; served during the World War; on the staff of the Columbus Hospital; aged 46; was found dead in bed, May 24, of coronary thrombosis and diabetes mellitus.

Henry Charles Babcock ✠ Miami, Fla.; Louisville (Ky.) Medical College, 1896; Kansas City (Mo.) Hahnemann Medical College, 1913; Eclectic Medical University, Kansas City, Mo., 1914; Kansas City (Mo.) College of Medicine and Surgery, 1916; aged 61; died, May 26, in a local hospital, of a self inflicted bullet wound.

Ross D. A. Gunn ✠ Oberlin, Ohio; Western Reserve University Medical Department, Cleveland, 1887; past president of the Lorain County Medical Society; formerly on the staff of the Allen Hospital, Oberlin College; aged 76; died, June 7, of coronary heart disease.

David John Marshall, Columbus, Ind.; University of Louisville (Ky.) Medical Department, 1891; member of the Indiana State Medical Association; past president of the Bartholomew County Medical Society; aged 70; died, May 10, of carcinoma of the gallbladder.

Julian C. Baum, Poplar Branch, N. C.; College of Physicians and Surgeons, Baltimore, 1894; member of the county board of education; aged 64; died, May 12, in the Hospital of St. Vincent de Paul, Norfolk, Va., of cerebral and gastric hemorrhage.

Bartholomew Lefkovics, New York; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1886; member of the Medical Society of the State of New York; aged 71; died, May 19, of coronary thrombosis.

David Russell Brown, Concord, N. H.; University of Vermont College of Medicine, Burlington, 1903; served during the World War; aged 55; on the associate staff of the Margaret Pillsbury Hospital, where he died, May 5, of uremia and nephritis.

John Joseph Dorsey, Kansas City, Mo.; Columbia University College of Physicians and Surgeons, New York, 1907; member of the Missouri State Medical Association; aged 49; died, May 1, in St. Mary's Hospital, of tuberculosis of the lungs.

Herman Winford Bundy ✠ Kankakee, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; on the staff of St. Mary Hospital; aged 55; was killed, May 19, in an automobile accident.

Thomas Johns Robinson ✠ Taunton, Mass.; Harvard University Medical School, Boston, 1891; formerly member of the board of health; on the honorary consulting staff of the Morton Hospital; aged 69; died, May 5, of arteriosclerosis.

George F. Converse, New Haven, Conn.; Yale University School of Medicine, New Haven, 1887; member of the Connecticut State Medical Society; aged 72; died, June 4, in the New Haven Hospital of carcinoma of the stomach and liver.

William Wallace McRae ✠ Corinth, Miss.; Memphis (Tenn.) Hospital Medical College, 1894; aged 70; medical superintendent of a hospital bearing his name, where he died, May 5, of a head injury received in an automobile accident.

Harrell Hardy ✠ Poteau, Okla.; Louisville (Ky.) Medical College, 1907; secretary and past president of the LeFlore County Medical Society; aged 53; died, May 22, in St. Edward's Mercy Hospital, Fort Smith, Ark., of acute appendicitis.

Sylvan H. Likes ✠ Baltimore; College of Physicians and Surgeons, Baltimore, 1893; member of the American Urological Association; fellow of the American College of Surgeons; aged 64; died, June 5, of chronic nephritis.

Edgar Savidge, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1896; aged 62; died, June 7, in the Graduate Hospital of the University of Pennsylvania, of acute yellow atrophy of the liver.

Louis Kunz, New York; Bellevue Hospital Medical College, New York, 1898; member of the Medical Society of the State of New York; aged 61; died, May 11, in the Lenox Hill Hospital, of peritoneal carcinomatosis.

Henry M. Fitzgibbon, Omaha; John A. Creighton Medical College, Omaha, 1908; member of the Nebraska State Medical Association; served during the World War; aged 56; died, May 9, in St. Joseph Hospital, of heart disease.

William F. Beyer, Punxsutawney, Pa.; Jefferson Medical College of Philadelphia, 1879; member of the Medical Society of the State of Pennsylvania; aged 84; died, May 24, in the Adrian Hospital, of perivesical abscess.

Francesco Cannito, Providence, R. I.; Georgetown University School of Medicine, Washington, D. C., 1934; aged 27; intern at St. Mary of Nazareth Hospital, Chicago, where he died, April 3, of cerebral embolism.

Bartlett Kniffin Menefee, Covington, Ky.; Louisville Medical College, 1893; member of the Kentucky State Medical Association; served during the World War; aged 70; died, May 20, of a self inflicted bullet wound.

Luther Addison Robertson ✠ Danville, Va.; University College of Medicine, Richmond, 1900; on the staff of the Memorial Hospital; aged 60; died, May 16, in St. Luke's Hospital, Richmond, of embolism.

Thomas G. Smith, Brownsburg, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1897; member of the Indiana State Medical Association; aged 71; died, May 26, of cardiovascular renal disease.

Frederick Chipman Hemeon, Boston; Jefferson Medical College of Philadelphia, 1897; member of the Massachusetts Medical Society; aged 66; died, May 26, of chronic myocarditis and arteriosclerosis.

Delno E. Kercher ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1895; on the surgical staff of the Methodist Episcopal Hospital; aged 66; was found dead, May 6.

James Michael Reilly, New Haven, Conn.; Yale College Medical Department, New Haven, 1878; member of the Connecticut State Medical Society; aged 79; died, May 26, of chronic nephritis.

Benjamin Franklin Uran, Kankakee, Ill.; Bellevue Hospital Medical College, New York, 1872; member of the Illinois State Medical Society; aged 87; died, June 10, in St. Mary Hospital, of myocarditis.

William Joseph Hosford, Santa Cruz, Calif.; Colorado School of Medicine, Boulder, 1890; veteran of the Spanish-American and World wars; aged 67; died, May 3, of carcinoma of the stomach.

William Elliott Brown, Indianapolis; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; aged 71; died, May 16, of dilatation of the heart and cirrhosis of the liver.

William Henry Guilfoy, New York; Bellevue Hospital Medical College, New York, 1889; for many years registrar of records of the city department of health; aged 75; died, May 23, of pneumonia.

Alexander Marcus ⊕ Newark, N. J.; University of Buffalo School of Medicine, 1929; aged 33; died, May 27, in the Newark Beth Israel Hospital of lobar pneumonia, empyema and endocarditis.

David Telesphore Berube, Augusta, Maine; Maryland Medical College, Baltimore, 1912; on the staff of the Augusta General Hospital; aged 47; died, April 21, of coronary thrombosis.

Charles D. Gardiner, Grand Tower, Ill.; Hospital College of Medicine, Louisville, Ky., 1877; aged 81; died, May 15, in a hospital at Murphysboro, of injuries received in an automobile accident.

James Henry Kitchens, Jonesboro, Ark.; Missouri Medical College, St. Louis, 1877; aged 83; died, April 27, in the Baptist Memorial Hospital, Memphis, Tenn., of cerebral hemorrhage.

David Morton Seymour, Bushnell, Fla.; University of the South Medical Department, Sewanee, Tenn., 1909; formerly mayor of Bushnell; aged 53; died, April 21, of pneumonia.

George W. Jones ⊕ Lawrence, Kan.; Bellevue Hospital Medical College, New York, 1890; medical director of the Lawrence Hospital; aged 75; died, May 1, of carcinoma.

John Calvin Huckins, Plymouth, N. H.; Baltimore Medical College, 1904; member of the New Hampshire Medical Society; aged 56; died, April 29, of a self inflicted bullet wound.

Eldorado C. Briggs, Wilmington, Ohio; Medical College of Ohio, Cincinnati, 1881; member of the Ohio State Medical Association; aged 81; died, May 27, of heart disease.

McClure W. Cowan, Parsons, Kan.; New York Homeopathic Medical College, 1880; member of the Kansas Medical Society; aged 79; died, May 21, of diabetes mellitus.

Isaac Clark Soule, Kansas City, Mo.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 75; died, May 4, of valvular heart disease and cerebral hemorrhage.

William R. Lincoln, Cleveland Heights, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1888; aged 73; died, May 24, of coronary thrombosis.

Moses Katz, New York; Illinois Medical College, Chicago, 1899; aged 61; died, May 17, in the New York Post Graduate Hospital, of carcinoma of the larynx.

John Waldo Snoke, Palo Alto, Calif.; Cooper Medical College, San Francisco, 1905; aged 57; died, April 12, of arteriosclerosis and cerebral thrombosis.

John N. Bartlett, Clarksville, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1887; aged 72; died, April 27, in Jefferson City, of carcinoma.

Elmer E. Glover, Franklin, Ind.; Indiana Medical College, Indianapolis, 1878; aged 81; died, May 10, of chronic valvular heart disease and influenza.

Clement Bruce George, San Jose Calif.; College of Medical Evangelists, Los Angeles, 1933; aged 26; died, May 12, of a fractured cervical vertebra.

Grace Alfaretta Rowley Bradley, Bradenton, Fla.; Hahnemann Medical College and Hospital, Chicago, 1894; aged 77; died, May 30, of carcinoma.

Reuben Milton Biggs, Palmersville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1877; aged 83; died, May 6, of angina pectoris.

Helen Hughes Hielscher, Mankato, Minn.; University of Minnesota Medical School, Minneapolis, 1896; aged 72; died, May 31, of meningitis.

Horace Irwin Slater, Port Chester, N. Y.; Cornell University Medical College, New York, 1933; aged 28; died, May 2, of Hodgkin's disease.

George Benjamin Haggart ⊕ Alliance, Ohio; Homeopathic Hospital College, Cleveland, 1892; aged 66; died, May 10, of cerebral hemorrhage.

Elizabeth Cassidy, Denver; Northwestern University Woman's Medical School, Chicago, 1897; aged 64; died, May 10, of arteriosclerosis.

Daniel Stephen Neuman, Napa, Calif.; Gross Medical College, Denver, 1895; aged 66; died, April 28, of chronic myocarditis.

Clarence Loeb, Winnetka, Ill.; Marion-Sims College of Medicine, St. Louis, 1899; aged 59; died, May 26, of dilatation of the heart.

Bureau of Investigation

THE RITHOLZ FRAUDS

The Post Office Finally Debars Some Crude Swindles from the Mails

Ten years ago the Ritholz mail-order quackery was dealt with at some length in this department of THE JOURNAL, July 25, 1925. A similar article, written for the public, appeared in *Hygeia* for August of the same year. At that time it was brought out that the National Watch and Jewelry Company run by four persons by the name of Ritholz was operating spectacle-fitting-by-mail concerns going under various names, such as "Ritholz Spectacle Company," "Chicago Spectacle House," "U. S. Spectacle Company," "Fitwell Spectacle Company," etc., etc. At that time the National Watch and Jewelry Company had the following personnel: Juda D. Ritholz, President; Samuel J. Ritholz, Vice-President; Morris Ritholz, Treasurer; Benjamin D. Ritholz, Secretary and Manager.

Since that time some of the Ritholz family have continued to operate fraudulent concerns under such trade names as:

U. S. Spectacle Co.	Dr. Ritholz Optical Co.
International Spectacle Co.	Dr. S. J. Ritholz Spectacle Co.
International Spectacle House	Dr. Ritholz Optical Co., Inc.
Dr. Ritholz & Sons	Ritholz Spectacle Co.
Ritholz Optical Co.	Physicians & Surgeons Optical Co.
Self-Test Optical Co.	Consumers Spectacle Co.
World Optical Corp.	Nu-Way Optical Co.
Shur-Fit Optical Co.	Capitol Spectacle Co.
Clear Sight Spectacle Co.	Nu-Sight Spectacle Co.

In November 1934 these variously-named companies were called on by the postal authorities to show cause by Dec. 10, 1934, why a fraud order should not be issued against them. The hearing was postponed from time to time, but was finally held Feb. 20, 1935, at which time Benjamin D. Ritholz appeared, accompanied by his attorneys. The hearing occupied nine days, and the transcript of the testimony comprises more than 1,600 typewritten pages. After all the evidence was in, the Hon. Karl A. Crowley, Solicitor for the Post Office Department, declared that the evidence showed that the scheme operated under these various names was one for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and Mr. Crowley, in a memorandum to the Postmaster General, recommended that a fraud order be issued against the various names listed above and, in addition, against the names of B. Mack, Manager, and J. G. Kite, Sales Manager. On May 3, 1935, the Postmaster General issued the order closing the mails to these frauds.

HISTORY OF THE SCHEME

The Solicitor's memorandum to the Postmaster General detailing the evidence in this case is one of the longest that has even been brought to the attention of the Bureau of Investigation, covering 70 typewritten pages. While it is much too long to give here in its entirety, some of the facts brought out therein are of interest in showing how large-scale quacks (more than a million dollars a year) can for years operate through the United States mails and defraud the public. We give briefly Solicitor Crowley's details of the history of the scheme: It was started in December, 1919, under the name "Chicago Spectacle House," which sold, through the mails, spectacles and other articles, including watches.

1921.—The first move on the part of the postal authorities to curb these swindles was in October 1921, when the Post Office Department charged the Chicago Spectacle House with making false representations in the conduct of its business. A month later Benjamin D. Ritholz executed the first of several worthless affidavits in behalf of the Chicago Spectacle House. In it Ritholz stipulated that the practices complained of by the postal authorities would be abandoned and never resumed at any time in the future. The evidence shows that the Ritholz concern did not abandon the practices complained of.

1922.—The second move by the Post Office Department was in December 1922, when Juda Ritholz, Samuel Ritholz, Morris Ritholz and Benjamin Ritholz were charged with the fraudulent

use of the mails. A month later Juda Ritholz and Benjamin Ritholz executed another of the famous affidavits. In this they stipulated that they would cancel all advertising under the names they were then using and promised to reorganize the business in corporate form that would definitely fix responsibility. They also promised to discontinue the use of more than one name. They apparently did neither.

1925.—The third effort on the part of the postal authorities took place in September 1925, when they charged Juda Ritholz, Morris Ritholz, Samuel Ritholz and Benjamin D. Ritholz once again with fraudulent use of the mails under the names of no fewer than thirteen companies. On motion of the Ritholz attorneys the charges were dropped without a hearing, but a month later the Ritholz attorneys were advised by the Post Office Department that the advertising of the Ritholz outfit was violating the postal fraud statutes.

1928.—Effort Number 4 of the Post Office Department was put forth May 4, 1928, when Benjamin Ritholz and his associates of the innumerably-named companies under which they did business were charged again with misuse of the mails. Not to be outdone, Benjamin D. Ritholz was on hand with another affidavit stipulating a discontinuance of the objectionable practices. This stipulation seems to have been just as worthless as the previous ones.

1932.—Post Office Effort 5 came in 1932, and once more Benjamin D. Ritholz and his associates were furnished with a memorandum charging fraudulent use of the mails. At the hearing the postal authorities produced thousands of complaints from dissatisfied customers who had failed to obtain the promised refunds from the Ritholz companies. By June 1933, Benjamin D. Ritholz had disgorged another affidavit, in which he promised to make refunds and proper adjustments to more than 1,200 complainants. As one might have expected from what has already been written, the Solicitor's memorandum states that "this promise on the part of B. D. Ritholz and his associates was not faithfully executed in accordance with its terms."

1934.—The sixth effort on the part of the Post Office brings us down to the charge of November 1934, finally heard toward the end of February 1935. Benjamin D. Ritholz and his associates were charged in the operation of their mail-order spectacle-selling scheme with having violated both in letter and in spirit the sworn stipulations which from time to time they were permitted by the Post Office Department to file to avoid the issuance of fraud orders.

SPECTACLES FREE!
On Trial
Send No Money!
Let me send you FREE on trial a pair of Ray Refracting GLASSES
Pay Only When Satisfied
Sensational Offer!
DOUBLE SIGHT GLASSES
FREE! ON 10-DAY TRIAL
$1.98
NEW TRU-FIT SPECTACLES FREE
6 PAIRS OF Spectacles FOR ONLY $1

Greatly reduced photographic reproductions of some of the numerous advertisements of the Ritholz concerns.

THE PRESENT BUSINESS

The Solicitor's memorandum also deals at some length with the present business and states that the evidence shows that Benjamin D. Ritholz, together with his brothers, Samuel Ritholz and Morris Ritholz, and his mother, Ante Ritholz (the last-named taking no active part in the business but having a financial interest therein), operate not only a mail-order spectacle-fitting business, but also some thirty-five optical stores and also a mail-order dental business!

The Postmaster at Chicago reported in November 1934, that the various Ritholz mail-order outfits were receiving, on an average, over 400 letters daily. The Solicitor of the Post Office Department then describes in detail the fraudulent methods used by these various-named concerns in selling spectacles on the mail-order plan. The evidence demonstrated that in more than 80 per cent of the test cases the Ritholz companies failed to furnish the proper lenses even according to the alleged policy and practice of the Ritholz concerns. Only in a few of the simplest cases, where the lens-strengths for each eye for both reading and distance were the same, did the Ritholz concerns furnish the proper lenses. Yet the Ritholzes have claimed that 95 per cent of their customers are satisfied and received the proper glasses. Not only this, but where several test orders contained the *same measurements* for reading and for distance, the Ritholz companies filled such orders with spectacles containing *different lenses in each case*, the variations ranging as high as three to five diopters.

Reputable ophthalmologists called by the postal authorities to testify in the case of course proved conclusively that it is quite impossible to fit spectacles satisfactorily on the mail-order plan. The Ritholzes were said to have produced two witnesses as experts, one of whom claimed to be a consultant of the Ritholz concerns. The "consultant" was Everett R. Brown, M.D., who, according to the records of the American Medical Association, was born in 1891, holds a diploma from Loyola University School of Medicine, Chicago, 1916, and an Illinois license of the same year. Brown had the effrontery in December 1934, to send out letters to physicians on the stationery of the Physicians Optical Service at 1148 West Chicago Avenue, Chicago. This is the address of the Ritholz quackeries. Brown in his letters stated that the Physicians Optical Service would furnish physicians with a "new patented eye-testing instrument, test charts, samples of glasses, etc." with "full explanation of their use." Brown emphasized in the letter that "Testing of Eyes Belong to Physicians" and stated that "Opticians Do Great Harm."

Everett R. Brown according to the government's report, "discredited himself upon the stand, not only by his unwillingness to answer simple questions which he pretended not to understand, but by continual evasion of questions and also by his ignorance of simple fundamental anatomical and physiological facts pertaining to the eye, and of other matters in which he claims to specialize." This same alleged expert also is said in the memorandum to have shown himself ignorant of the functions of the optic nerve, erroneously asserting that it furnishes the nerve supply for the various muscles of the eye. He was even unable to state on cross-examination the characteristics of compound astigmatism, which constitutes between 40 and 50 per cent of errors of refraction, saying that he never saw a case! In various other ways, it appears from the evidence submitted in the Solicitor's memorandum, he demonstrated his ignorance. Such ignorance, of course, might be expected of a physician who would act as expert for such quacks as the Ritholz concerns.

SUMMARY

The Solicitor, in summarizing the voluminous evidence, stated that the Ritholz concerns solicited and obtained remittances of money through the mails by fraudulently representing that they, the Ritholz concerns, took all the risk, when, as a matter of

fact, the customer took the risk. The evidence showed, further, that the so-called "Scientific Self-Tester" that the Ritholz people sent to prospective victims was neither scientific nor based on sound principles. The evidence also showed that although the Ritholz concerns claimed to have "perfected a system of fitting glasses by mail," yet Benjamin Ritholz himself conceded at the hearing that glasses cannot be fitted by mail! While the Ritholz companies claimed that there was "no guesswork to their system," the facts were the entire system was based on guesswork.

It was further brought out that the lenses furnished by the Ritholz concerns were (1) inaccurately and poorly ground, (2) were not of a proper strength, (3) were incorrectly placed in the frames, (4) in some instances were chipped, cracked, splintered and decentered, (5) that many of the "bifocals" were made by simply pasting or gluing an additional slip of glass on the lower segment of the lens, with the result that in some instances the glue was opaque and in others it was spotty, and in still others the segments or slips became detached. It was shown, also, that the claim that a "trained specialist" checked the lenses after the spectacles were assembled was false, the so-called checking actually being done by untrained office girls. Many other fraudulent elements in the scheme were dealt with at length in the memorandum.

The principal contention of the Ritholzes in the case was that their customers got exactly what they ordered. The postal authorities, on the other hand, stated that the evidence shows that this was false, the fact being that the customers did not get either what they had been led to believe they would get or what they ordered. Hence the fraud order debarring this pertinacious and impudent fraud from the use of the United States mails.

The story is a sorry one. How many millions of dollars the Ritholz concerns have taken out of the pockets of ignorant but hopeful people is not of record. From the public's point of view, the tragic situation is that closing the mails to the eighteen company names and to the manager, Mack, and the sales manager, Kite, is a rather feeble punishment to the Ritholz fakers, who, individually, can still use the United States mails. It would seem that if ever there was a case which called for criminal prosecution, this is it. It is to be hoped that the postal authorities will bring to a good finish a job that has extended over fourteen years, by attempting to put in the federal penitentiary those members of the Ritholz family who have been guilty of the swindles here set forth.

During the past year or two the Ritholz concern, in addition to its mail-order quackeries, has opened a number of retail stores. There are more than a dozen such stores in Chicago alone. Thanks to the energetic action on the part of the Chicago Better Business Bureau, all Chicago newspapers and radio stations have barred their columns and facilities to the advertising of the Ritholz stores. The street cars of Chicago are not so particular; they still carry blatant advertisements of the Ritholz retail establishments.

The Giant Irishman.—John Hunter, the eighteenth century leader of English surgery, anatomy and physiology, spent most of his fortune and energy in collecting the famous Hunterian Museum, which is now housed in the College of Surgeons, London. One of its most remarkable specimens is the great 7 foot 7 inch skeleton of the giant Irishman O'Brien, who died in London in 1783. . . . The undertaker was bribed by Hunter with £500, and, while the escort was drinking at a certain stage on the march seaward, the coffin was locked in a barn. There, some men concealed by the accomplice speedily substituted an equivalent weight of paving stones for the body, which was at night forwarded to Hunter. He took it in his own carriage to his home in Earl's Court, where in order to avoid the risk of discovery it was immediately immersed in boiling acid, after suitable division, to obtain the bones. This accounts for the brown color of the bones today. Hunter prized this specimen above all others, and in his famous portrait by Sir Joshua Reynolds, part of the skeleton is prominently placed in the background.—Guttmacher, A. F.: Bootlegging Bodies: A History of Body-Snatching, *Bull. Soc. M. Hist. Chicago* **4**:353 (Jan.) 1935.

Correspondence

EXPRESSION OF APPRECIATION BY THE CANADIAN MEDICAL ASSOCIATION

To the Editor:—It would be greatly appreciated by the members and friends of the Canadian Medical Association who were privileged to attend the joint meeting in Atlantic City if you would be kind enough to publish this letter in the columns of THE JOURNAL in order that an opportunity may be afforded us to express our very sincere appreciation and thanks to the American Medical Association, the Medical Society of the State of New Jersey, the Medical Society of Atlantic County, the Women's Auxiliary of the American Medical Association, and that great host of individuals, both men and women, who so graciously received and hospitably entertained Canadians during the course of the convention. Those of us who had the good fortune to be present realize fully the efforts that were put forth to make the meeting the great success it proved to be, and to each and every one to whom we are indebted we desire to say Thank You.

T. C. ROUTLEY, M.D., Toronto.
General Secretary, Canadian Medical Association.

GRANULOPOIETIC EFFECT OF LIVER EXTRACT

To the Editor:—In Queries and Minor Notes in THE JOURNAL, May 25, page 1928, in a discussion on leukopenia, it is stated that "liver extract and yellow bone marrow are reported to have stimulated granulopoiesis in a limited number of patients, but the rationale of this therapy is not yet clear" and, in another sentence, "leukopenia secondary to megaloblastic hyperplasia, as in pernicious anemia, is, of course, automatically relieved by liver following the restoration of normal erythroblastic marrow, but this is not due to any direct defect on granulopoiesis."

I want to call your attention to two papers that, I believe, established without a question of doubt the granulopoietic stimulating effect of liver extract administered parenterally. I doubt very much that animal experimentation can establish the stimulating effect of any substance in this respect more clearly than these papers do. The references are: Powers, J. H., and Murphy, W. P.: Leukocytosis Following the Intramuscular Injection of Liver Extract, *J. Clin. Investigation* **12**: 713 (July) 1933, and Myer, O. O.; Middleton, W. S., and Thewlis, Ethel M.; *Am. J. M. Sc.* **188**: 49 (July) 1934.

WILLIAM P. MURPHY, M.D., Boston.

ETHYLENE ANESTHESIA

To the Editor:—One of the most regrettable incidents relating to surgery in the United States is the discarding of the most successful of all inhalation anesthetics by the majority of hospitals because of explosions in its use. I refer to ethylene. There is practically no danger if the anesthetic is properly safeguarded from static ignition, and this is too easily done to sacrifice the benefits of this wonderful agent. Complicated apparatus with tubes and compartments that cannot be reached by the humidity from rebreathing and thus eliminate or dissipate all static has brought about these explosions. Hence the type of apparatus used was inherently the danger, as this gas has been used by other methods so extensively without ignitions that the statement may be made that this fact is well proved. In Baylor University Hospital, ethylene has entered into from 95 to 98 per cent of all general anesthesias since October 1923, with use of the simplest possible device, consisting only of a rebreathing bag and attached face piece. Nitrous oxide-oxygen

is started with and the ethylene is added after consciousness is lost. The relative humidity in the apparatus is 100 per cent after the first five or six breaths are exhaled into the bag. As from 55 to 65 per cent relative humidity positively dispels static electricity, this method removes all possible danger. This simplified type of apparatus can be used with perfect safety. Let the people have the advantages and safety of this superb anesthetic, which is far superior to nitrous oxide-oxygen with ether added, as is now so widely used since ethylene has been so unnecessarily discarded. About 200 other hospitals in Texas are using ethylene gas in the same manner.

JAMES G. POE, M.D.,
Baylor University Hospital,
Dallas, Texas.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF UNDERSIZED CHILD

To the Editor:—A boy, aged 14 years, was brought to my office for examination and treatment because of his small size and lack of weight. He is 55½ inches (140 cm.) tall and weighs 59½ pounds (27 Kg.) with his shoes, pants, socks and undershirt on. His mother and father both are of normal height but are noticeably thin. One brother and one sister are of normal height and weight for their age groups. The father was rejected for service in the army because of his weight; he weighed 110 pounds (50 Kg.) at 21 years; his height is not known. The boy's past history is essentially negative. His birth weight is not recalled. He has had chickenpox and measles. The tonsils and adenoids were removed at 10 years for adenoid obstruction, with relief. He always has seemed healthy, though small. He has no complaints at present, except for occasional "styes" on each eye. The cardiorespiratory, gastro-intestinal and genito-urinary systems are normal. He sleeps well. He is in the first year of high school and obtains better than average grades. He has no unusual dietary habits and eats with relish a dietary that is obviously adequate for an older sister and a younger brother. Physical examination yields little except for the obvious small size. He is thin; the ribs stand out and can be counted with ease. The eyes, ears, nose, mouth, throat, lungs, heart and abdomen are normal. There is no pubic hair, but the genitals are only slightly less than the average size for his age group. There is copious hair on his arms. Examination of the urine shows no albumin or sugar. The sediment is negative except for urate crystals. Hemoglobin is 75 per cent; red blood cells number 4,880,000; white blood cells, 8,700. Smear shows 70 per cent polymorphonuclears, 25 per cent lymphocytes, 4 per cent large mononuclears, 1 per cent myelocytes. The red blood cells and platelets appear normal. 1. Is there any reason to think that the child is suffering from some endocrine disorder? Is he necessarily abnormal or merely one of the extremes of the normal? 2. Can he be made to gain weight, and, if so, how? Please omit name.

M.D., Massachusetts.

ANSWER.—The 14 year old boy in question, whose height is given as 55½ inches (140 cm.), should have an ideal weight of 75 pounds (34 Kg.) for this height according to the Baldwin tables. The average height for a 14 year old boy is 59½ inches (151 cm.) and the ideal weight for this height is 90 pounds (41 Kg.). The child is therefore short for his age group and underweight for his actual height and age. His father weighed 110 pounds (50 Kg.) at 21 years of age, which is very light for this age and presupposes a slight, bony frame. The mother is also said to be thin. With this available information it would be permissible to conclude that the boy is small and slight and follows the general body configuration of his parents. If this is accepted, in the absence of any confirmatory information one would see no reason to think that the child is suffering from an endocrine disorder.

2. It is noted that he has normal dietary habits and eats amounts equivalent to those of his sister and brother. If he should be put to bed, with absolute rest, and given a very high fat and carbohydrate diet, he could probably be made to gain some weight. However, as he seems to be in good health and leading an active, normal life, it hardly appears justifiable to put him through a fattening process.

Recently extract of the pituitary gland has been employed, containing the growth hormone. Engelbach and Schaefer (THE JOURNAL, Aug. 18, 1934, p. 464) report the use of this in the treatment of seven cases of dwarfism. The patients were from 7 to 18 years of age. They reported growth in the children treated. Such studies are not very convincing, because it is well known that growth in height may normally take place during some seasons of the year and may be absent or retarded in others.

PAIN AFTER FUSION OPERATION ON SACRO-ILIAC JOINT

To the Editor:—An unmarried woman, aged 47, was operated on by a very competent and well known orthopedic surgeon of Atlanta about three years and three months ago for a chronic sacro-iliac subluxation, and a fusion was done. Since the operation there has been constant aching pain in the lumbar region and the buttocks. The latter are so tender that she finds it impossible to make trips of any distance in her car. Roentgenograms of the vertebral column, both anteroposterior and lateral, by a good roentgenologist show good results from the operation and no signs of arthritis or anything else. Can you possibly give me any information as to what is causing all this pain? Fourteen months ago, spurs were removed from the os calcis of each foot by another orthopedic surgery of the same city. Since the operation there has been swelling of both ankles and aching pain in the arches and dorsa and heels of both feet. The patient also complains of cramping of both feet, especially the big toe of the right foot when the shoe is off. Recent roentgenograms have demonstrated the return of the spur on the left os calcis. What percentage of spurs recur after operation? Is it common or uncommon for them to recur? Can the condition be attended to medically by giving a diet low in calcium-containing foods to prevent further growth of the spur or is diet necessary at all to prevent this? Please omit name and address.

M.D., Florida.

ANSWER.—Taking it for granted that the fusion operation was performed on one sacro-iliac joint, there is in some cases considerable strain thrown on the other sacro-iliac joint and the lumbosacral joints.

It is also possible to have arthritis without positive roentgen signs. The cause of the pain in the lumbar region and buttocks and tenderness while sitting in an automobile may be due to local or referred causes.

Local conditions that should be considered are gluteal bursitis, myositis and postural disturbances; the referred conditions are arthritis of the lower lumbar, lumbosacral joints with sciatic nerve radiation, part of which may be superior gluteal nerve pain.

Concerning the feet, there is undoubtedly some circulatory disturbance of the feet and ankles and mechanical disturbances in the arches and plantar fascia. There may be a mechanical disturbance of the transverse arches.

In reference to the recurrence of spurs following operation, we know of no figures of a series sufficiently large to justify a percentage basis. It is fairly common that recurrence of the spur may take place. There is no doubt that in many cases there is a metatarsal disturbance, and without the correction of this the operation is often unsuccessful.

EFFECTS OF BELLADONNA ON CHILD

To the Editor:—Will you discuss the probable effect of the following prescription, which was given to a baby, aged 4 months, weighing 10 pounds (4.5 Kg.). The baby was suffering from a cough and cold; it had no fever: tincture of belladonna, 3 drachms; elixir lactated pepsin, sufficient to make 4 ounces. One teaspoonful every six hours. Please omit name.

M.D., Virginia.

ANSWER.—The dose of 6 minims of tincture of belladonna for a baby aged 4 months is excessive and may result in symptoms of atropinism, such as dilatation of the pupil, dry red throat and skin, rapid pulse and rapid respiration, with possibly fever and even delirium, a clinical picture that sometimes resembles scarlet fever.

PAIN AFTER CHOLECYSTECTOMY

To the Editor:—Is there anything that can be done to help patients permanently who continue to have severe attacks of pain in the right upper quadrant from one to fourteen years after cholecystectomy? Is there any surgical intervention that would give much chance of success, as cutting nerves or the sphincter of Oddi? I have tried such medical measures as weight reduction, high fat diet, low fat diet, normal diet, atropine, belladonna, bile salts, epsom salt, hot and cold water, and olive oil, without preventing the attacks. What combination works the best or is there anything new I could try? Please omit name and address.

M.D., Montana.

ANSWER.—In most instances of severe right upper quadrant attacks following cholecystectomy, if no stones have been found, the pains are due to a spasm or partial obstruction in the sphincter of Oddi and are usually cured by common duct drainage ranging from four to seven weeks. If stones were found in the gallbladder at the time of the cholecystectomy, it is quite possible that some small stones have been overlooked in the

common duct, which was probably not opened and then, of course, the patient could suffer with repeated attacks of right upper quadrant pain without jaundice. This sometimes can be determined by examining the urine for bile immediately after the attack. Probably the best way to relieve such pains is to administer atropine sulphate. The patient will in all probability never be well until a thorough exploration is made of the common duct or drainage or common duct anastomosis is done.

POISONING FROM LEAD IN STORAGE BATTERIES

To the Editor:—A man in his early forties, proprietor of a tire and battery shop, complains that the fumes from batteries, charging and repairing, irritate the upper respiratory tract, and he feels that they are important in the causation of a chronic bronchitis; these symptoms are much exaggerated during the winter months, when ventilation in the shop is inadequate. The shop is not equipped with hoods or other means of carrying the fumes away. The patient is underweight and there is a moderate secondary anemia. He complains of easy fatigue, flatulence and restless sleep. According to certain authorities, men engaged in such work may suffer from lead poisoning. While admitting that part of the respiratory tract irritation is probably due to acid fumes and so on, can one consider that this man is suffering from lead poisoning on the basis of the evidence submitted? There is no lead line on the gums nor does the patient present other definite diagnostic criteria, such as lead colic or wrist drop. An examination for stippled cells has not been made. The patient has been advised to wear a respirator while working over the storage batteries. If this is proper, what special type of respirator should be used? Please omit name. M.D., Ohio.

ANSWER.—In the largest of storage battery manufacturing plants, in the departments where batteries are charged, lead poisoning is unknown. Likewise the usual duties involved in the small type of battery shop ordinarily do not result in lead poisoning. The sulphuric acid employed in batteries does not readily evaporate, but acid vapors in small amount do find their way into the atmosphere, chiefly as a result of chemical ebullition, the breaking of countless bubbles at the surface of the liquid thrusting small quantities of the acid into the atmosphere. This acid in the atmosphere is irritating, may affect the teeth, may lead to irritation of the respiratory tract, and when swallowed with saliva may lead to gastric disturbances. From a practical point of view this occupational disorder is apparently not very important among the many hundreds of workers engaged in this phase of storage battery manufacture. In the building of storage batteries the hazard to lead poisoning is great but in ordinary repair work in small shops exposure is on a much lower plane. For this reason no justification exists for believing solely on the basis of the evidence submitted in the query that this worker is suffering from lead poisoning. Greater significance should be attached to the presence of acid vapors. The presence or absence of stippled cells in the blood is coming to be associated with lesser diagnostic importance than heretofore. The presence of reticulocytes or basophilic aggregation in excess of 1 or 1.5 per cent may be of more significance than the presence of a few stippled cells. The hazards under discussion are believed to be of such low magnitude that the wearing of a respirator may not be warranted. General exhaust systems are at this time regarded with greater favor for this particular kind of work.

EXPULSION OF MECONIUM IN BREECH PRESENTATION

To the Editor:—In a recent case in which there was a breech presentation of the fetus, the bag of waters ruptured, the meconium exuded from the vagina, and small clots of blood came for ten days before the baby was finally delivered by cesarean section. When the meconium first appeared, the heart tones were quite weak. I attempted to induce labor in this case, since it was at full term, at two different times with quinine, castor oil and solutions of pituitary but was unsuccessful. I then had consultation and a specialist suggested that I insert a bag and attempt to induce labor. This also was unsuccessful in starting contractions for more than a few hours. Finally a low cervical section was done, the baby was born alive and the mother recovered well. The baby had a marked desquamation of the skin at the time of birth, large plaques of skin peeling off intact. The baby has gained and is doing fine at the present time. What I want to know is whether meconium could produce maceration of the skin, or was some other factor the cause of this peculiar condition? Could you give me the chemistry of meconium and is it not unusual for a baby to pass meconium for ten days and still be alive? Kindly omit name. M.D., Washington.

ANSWER.—The passage of meconium in this case has no significance and was to be expected, because the baby presented by the breech and the membranes were ruptured. The expulsion of meconium in a breech presentation is not a cause for alarm, because it is almost always due to pressure on the fetal abdomen, which results in mechanical expulsion of the meconium. When meconium is passed in the presence of a cephalic presentation, it usually signifies fetal distress. In such a case the fetal heart tones are nearly always irregular in rhythm or unusually rapid or slow. In cases in which the heart tones remain regular in the presence of meconium, there is generally no immediate danger to the child; but the fetal heart tones should be carefully controlled until the baby is born.

In cephalic presentations the expulsion of meconium is due to stimulation of the sympathetic nervous system, especially the celiac ganglion, which leads to excessive peristalsis of the intestine. This stimulation of the sympathetic nerves is due to an abnormal mixture of gases and hence it is a disturbance in the respiratory mechanism of the fetus. The sympathetic nervous system is stimulated by an abnormal gas mixture sooner than the vagus center. This explains why meconium usually is expelled before alterations in the heart tones appear.

Meconium may be found in a fetus from the fourth month on. It consists of epithelium from the intestinal tract, mucus, bile, bilirubin, fat, cholesterol crystals, lanugo hairs, vernix caseosa, skin epithelium and the digestive juices of the stomach, pancreas and intestine; but 80 per cent of meconium is water.

It is hardly likely that the meconium produced the extensive desquamation of the skin in this case, chiefly because most of the meconium was expelled directly from the anus through the cervix into the vagina. If most of the meconium had remained in the uterine cavity and had come into intimate contact with the baby's skin, it could have had deleterious effects on the skin. The desquamation is more likely due to the absence of liquor amnii and to a mild infection. The latter was most likely present because of the long delay after the rupture of the membranes and because of the bag induction.

JUTE DERMATITIS

To the Editor:—Is there such a thing as poisoning from the oil used in softening sisal in the manufacture of jute or even in the jute or sisal itself which would give what workmen in such plants call "oil poisoning"? I have a patient who has had a reddened, scaly, itching, chronic, recurrent, pustular umbilicated dermatitis for more than a year. It cleared up with injections of boiled milk, but I should like to know if there is any connection with the oil or if it is mere coincidence. Please omit name. M.D., Kentucky.

ANSWER.—Sisal or jute dermatitis is a fairly well known industrial disease entity. The action is attributable partly to the soaps, fish and mineral oils employed in the manipulation of the vegetable fiber and partly to the mechanical action of the fibers themselves. Also allergy may play some part in the causation of this condition. From an International Labor Office publication (1930), Encyclopedia of Pathology, Hygiene and Social Welfare, brochure 212, the following is taken:

"Skin affections, characterized by irritation of the skin, redness and swelling, dry eczema, papillary hypertrophy and inflammation, advancing even to suppuration, have been reported in people handling jute where the thread was impregnated with a solution of yellow soap, impure fish oil and mineral oil.

"The coloring matters and oils handled in manipulating jute are the cause of the folliculitis observed, notably in India. The lesion is nonsuppurative in character brought on by mechanical obliteration of the orifice of the sebaceous glands by débris from the corneal layer, the exfoliation of which is obstructed by the presence of the oil on the skin. The accumulation of this débris is frequent among the natives, who do not use detergent soap sufficiently, water alone being insufficient in these cases."

The entry of mycotic organisms frequently prolongs the duration of this type of industrial dermatitis.

HYPERPYREXIA IN NEW-BORN

To the Editor:—I recently saw a baby 24 hours old with a rectal temperature of 109 F. The only other abnormality was the presence of many coarse râles in the bronchial tubes. Will you please explain hyperpyrexia in new-born babies? Please omit name. M.D., Iowa.

ANSWER.—The history of this case is unusual. A temperature of 109 F. in a new-born baby has not been frequently reported. The elevation of temperature occurred earlier than is usually observed. Generally the temperature in the so-called transitory fever of the new-born is from 100.5 to 102 F., though it may be higher. The fever is usually observed on the third or fourth day, and the earliest is usually at the end of the second, though it may not occur until the fifth day. It may last only a few hours or continue for two or three days. E. L. Holt observed that the highest temperature usually coincided with the time when the loss in weight was greatest. As a rule, fever disappears as the weight increases, though this is not invariably the case, because the temperature may return to normal without increase in weight and without increase in

the amount of water ingested. There are several explanations for this so-called transitory fever. Some have thought it due to intestinal infection or intoxication. It has been suggested that it might be due to fever-producing substances in the colostrum. It has been learned from experience with older infants that an insufficient supply of fluids may produce fever. Consequently it has been thought that most of the transitory fevers of the new-born period are thirst fevers, although it is possible that the febrile reactions may be due in part, at least, to the breaking down of the blood cells or other body proteins, giving rise to the so-called protein fever. It should be remembered that the new-born baby's temperature regulating mechanism is characterized by extreme lability. An excessively hot bath, an overheated water bag or the application of external heat of any kind may cause a decided febrile reaction. Meningeal or intracranial hemorrhages or malformations of the brain may also cause high fever. Septic processes, especially localized umbilical infection, may cause temperature fluctuations, though one would hardly expect a febrile reaction from such a cause to occur as early as the first day of life.

Without more definite details it is not possible to interpret the coarse râles in the bronchial tubes, though it should be remembered that new-born and young infants may develop pneumonia as the result of aspiration of amniotic fluid during labor, or to the rare antenatal or postnatal pulmonary infections.

NUMBNESS OF FINGERS

To the Editor:—In Queries and Minor Notes in THE JOURNAL, May 25, page 1929, your reply states that "numbness of the middle three fingers does not correspond to the distribution of the peripheral nerves." It is true that the numbness of the middle three fingers does not correspond to the distribution of any named peripheral nerve, but it does correspond exactly to the distribution of the seventh cervical root according to figures 90 and 91, on pages 359 and 360, of the ninth edition of Surgical Applied Anatomy by Sir Frederick Treves, revised by C. C. Choyce in 1934. Therefore it is possible that the pressure on the seventh cervical nerve by a cervical rib or something else may cause the numbness of the middle three fingers.

K. S. CHOUKE, M.D., Denver.

Council on Medical Education and Hospitals

ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, March 2:

Hospitals Approved for Intern Training

St. Mary's Hospital, Pueblo, Colo.
St. Mary's Hospital, Huntington, W. Va.

Hospitals Approved for Residencies in Specialties

Employees Hospital of the Tennessee Coal, Iron and Railroad Company, Fairfield, Ala. Medicine and surgery.
Maryland Tuberculosis Sanatorium, State Sanatorium, Md. Tuberculosis.
Plymouth County Hospital, South Hanson, Mass. Tuberculosis.
Worcester State Hospital, Worcester, Mass. Psychiatry.
University Hospitals, Columbia, Mo. Orthopedics.
Hudson County Tuberculosis Hospital and Sanatorium, Secaucus, N. J. Tuberculosis.
Municipal Sanatorium, Otisville, N. Y. Tuberculosis.
St. Thomas Hospital, Akron, Ohio. Surgery and mixed residencies.
Youngstown Hospital, Youngstown, Ohio. Mixed residencies.
Willis C. Campbell Clinic, Memphis, Tenn. Orthopedics.
Galveston State Psychopathic Hospital, Galveston, Texas. Psychiatry.
Salt Lake General Hospital, Salt Lake City. Mixed residency.
Norfolk Protestant Hospital, Norfolk, Va. Medicine and surgery.

Hospitals Approved for Additional Residencies

Garfield Memorial Hospital, Washington, D. C. Pathology.
James M. Jackson Memorial Hospital, Miami, Fla. Mixed residencies.
Charity Hospital, New Orleans. Orthopedics and pathology.
Boston City Hospital, Boston. Ophthalmology-otolaryngology.
Minneapolis General Hospital, Minneapolis. Psychiatry.
Albany Hospital, Albany, N. Y. Tuberculosis.
Long Island College Hospital, Brooklyn. Pathology.
Lenox Hill Hospital, New York City. Pathology and neurology.
Morrisania City Hospital, New York City. Obstetrics.
Duke Hospital, Durham, N. C. Urology, orthopedics and psychiatry.
St. Luke's Hospital, Cleveland. Pathology.
State University Hospital, Oklahoma City. Anesthesia and obstetrics.
Presbyterian Hospital, Philadelphia. Mixed residency.
Baroness Erlanger Hospital, Chattanooga, Tenn. Mixed residency.

Medical Examinations and Licensure

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMOLOGY: Cincinnati, Sept. 17. Application must be filed before July 15. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Cincinnati, Sept. 14. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: Seattle, Aug. 8, Philadelphia, Oct. 10, and St. Louis, Nov. 10. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF RADIOLOGY: Detroit, Dec. 1-2. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

CALIFORNIA: San Francisco, July 8-11 and Los Angeles, July 22-25. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: Hartford, July 9-10. *Endorsement.* Hartford, July 23. Sec., Medical Examining Board, Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

DISTRICT OF COLUMBIA: Washington, July 8-9. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

HAWAII: Honolulu, July 8-11. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

MASSACHUSETTS: Boston, July 9-11. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examination will be held in all centers where there are Class A medical schools and five or more candidates desiring to take the examination, Sept. 16-18. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEVADA: Reno, Aug. 5. Sec., Dr. Edward E. Hamer, Carson City.

OREGON: *Basic Science.* Corvallis, July 27. Sec., Basic Science Examining Committee, Mr. Charles D. Byrne, University of Oregon, Eugene.

PENNSYLVANIA: *Written.* Philadelphia and Pittsburgh, July 9-11. *Bedside.* Philadelphia, July 12-13. Dir., Bureau of Professional Licensing, Mr. W. M. Denison, 400 Education Bldg., Harrisburg.

SOUTH DAKOTA: Rapid City, July 16-17. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

UTAH: Salt Lake City, July 8-10. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

WASHINGTON: *Basic Science.* Seattle, July 11-12. *Medical.* Seattle, July 15-17. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Clarksburg, July 8. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

Maine March Report

Dr. Adam P. Leighton Jr., secretary, Maine Board of Registration of Medicine, reports the written examination held in Portland, March 12-13, 1935. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Eleven candidates were examined, all of whom passed. One physician was licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1933)	84
Tufts College Medical School		(1931) 84, (1933) 85,	(1934) 83, 85
Cornell University Medical College		(1934)	82
Hahnemann Med. College and Hosp. of Philadelphia		(1896)	77
University of Vermont College of Medicine		(1933)	83
Queen's University Faculty of Medicine		(1928)	86
McGill University Faculty of Medicine		(1907)	76
Regia Università di Napoli Facoltà di Medicina e Chirurgia		(1932)*	77

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School		(1924)	Illinois

* Verification of graduation in process.

New Hampshire March Report

Dr. Charles Duncan, secretary, New Hampshire State Board of Registration in Medicine, reports the oral, written and practical examination held in Concord, March 14-15, 1935. The examination covered 13 subjects and included 80 questions. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. Seven physicians were licensed by reciprocity and 2 physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Tufts College Medical School		(1934)	80, 80

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tufts College Medical School		(1932)	Mass.
University of Michigan Medical School		(1927)	New York
Columbia Univ. College of Physicians and Surgeons		(1928)	Vermont
University of Vermont College of Medicine		(1929), (1932)	Vermont
University of Toronto Faculty of Medicine		(1927)	Michigan
McGill University Faculty of Medicine		(1932)	Vermont

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Yale University School of Medicine		(1927)	N. B. M. Ex.
University of Nebraska College of Medicine		(1926)	N. B. M. Ex.

Book Notices

Hugh Owen Thomas: A Personal Study. By Frederick Watson. Cloth. Price, $4.25. Pp. 94, with 8 illustrations. New York & London: Oxford University Press, 1934.

This little book contains interesting reading concerning one of the unique figures in medicine and surgery. It is a personal study of Hugh Owen Thomas by Frederick Watson, who also wrote the life of Sir Robert Jones, who was Hugh Owen Thomas's nephew. The author is well qualified to make the study. The book will be followed by a companion book on the principles and practice of Hugh Owen Thomas, written by Mr. McCrae Aitken.

Born of a family of unqualified but highly respected "bone setters," Hugh Owen Thomas made a name that will probably live forever. Realizing the handicap of "unqualification," his father sent five sons—including the leading character of this book—to the Edinburgh Medical School. All five sons graduated in medicine and surgery and proceeded to London, following which each in turn became the assistant of Dr. Owen Roberts. The Thomas family lived generation after generation in the district of Wales least accessible to modern progress and ideas. It was the country of the druids, whose descendants the bards, still expressed the sentiments of the people. The history of the Anglesea bone-setters provides an impressive picture of a family devoted to the art of healing throughout eight consecutive generations and inspired largely by a sense of divine guidance and a faith in an inherited faculty for handling dislocations. As well-to-do yeoman farmers, the Thomases could afford to attend their neighbors without fee. The paternal great-grandfather of Hugh Owen Thomas was one of the most celebrated and skilful of this family of bonesetters. His name was Evan Thomas. There is evidence of the important place of the family in North Wales, whose descendants a generation after the death of Evan Thomas included no less than twenty-one doctors or bone setters of both sexes. Evan Thomas was until his death overwhelmed by patients drawn from the seafaring communities and from the docks. His immense general practice provided a greater variety and number of cases than any other in the world. It was estimated that he saw between thirty and sixty patients a day. Doubtless a percentage of these came to his son Hugh Owen Thomas, but the bulk of his work consisted of the medical supervision of shipwrights, iron workers, boilermakers, seamen, dock gatemen and industrial concerns. This varied field served him in place of a hospital appointment, which an outraged medical community in Liverpool resolutely refused him to the end of his life.

Physically Thomas was a diminutive man, and intellectually not a little alarming to the conventional environment of a Welsh home. But of his high character and courage there could never have been any question. And even his eccentricities were not without a tender and romantic glamor. He wore a peaked cap, to protect an injured eye, and smoked cigarets continually. Thomas was a man of indomitable courage and a fine sense of a physician's moral duty. During his engagement to the beautiful Elizabeth the great cholera epidemic broke out in Liverpool. Without a moment's hesitation he flung himself into the heart of the ghastly slums where it was raging. Night and day he labored for the unfortunate uncared for class on whom his great reputation was destined to be established. His escape from infection was miraculous, and the explanation given by Thomas himself was the precaution he took of smoking. Thomas was a tremendous worker in a sense and to a degree quite outside the capacities of ordinary men. He did not work for money or to secure success. He worked because he loved his calling and found the greatest and most enduring happiness in it. He was obsessed by a sleepless search for truth. It drove him on from dawn to dusk. To most men the consolations for work lie in prestige, money or power. To Thomas the only reward was knowledge through progress. His watchword "On" describes his physical and spiritual impulses. The sacrifice of everything for knowledge made him so eager and determined in argument that he created more enemies at the end of his pen than many men could have done at the point of a sword. Nor was he a man who could relax. Even in his occasional hours of leisure late at night he was occupied with his lathes or practicing the flute. He was considered an original, entrancing, heroic husband. If one should attempt to analyze Thomas's special aptitudes, one would say that they consisted in an original mind not in the least tainted with reverence for authority as authority, whatever its source.

Dr. John Ridlon said "During my fourteen days with Thomas I saw more injured and diseased shoulders than ever before or since. Why? Because he was the surgeon for twenty-eight labor organizations along the Liverpool docks." Ridlon's opening statement to Thomas was "Mr. Thomas, I have read your book on the hip, knee and ankle and I have come three thousand miles to find out whether I am a fool or you a liar." Ridlon has said that "the greatest thing Robert Jones ever did was to make the main principles of Thomas acceptable to the profession."

Thomas realized that if a working man does not miss more than a few hours from his work because of an injury, it never occurs to him to choose compensation and idleness instead of the full pay that his work brings him. Treated in their own home, most workmen are anxious to get back to their work. Cared for in the sunny ward of a clean hospital by an attractive nurse, it is quite different. Why worry about getting back to work! Hugh Owen Thomas had his home, office and brace shop at 11 Nelson street, Liverpool, which is a byword in orthopedic surgery and considered the birthplace of modern orthopedics in Great Britian.

The book contains several interesting illustrations, especially the one showing Thomas wearing a cap and smoking a cigaret while reducing a dislocation of the shoulder, with the future Sir Robert Jones assisting.

Die ansteckenden Krankheiten: Ihre Epidemiologie, Bekämpfung und spezifische Therapie. Herausgegeben von Prof. Dr. med. et phil. Max Gundel, Institut Robert Koch, Berlin. Unter Mitarbeit von E. Boecker, et al. Paper. Price, 35 marks. Pp. 641, with 25 illustrations. Leipsig: Georg Thieme, 1935.

This book is written by twenty-two German medical scientists who are especially well qualified for their respective tasks by reason of training and function. The main part is devoted to the control and treatment of the individual infectious diseases, which include bacterial, spirochetal and protozoan infections as well as the virus diseases, diseases of unknown etiology, fungous diseases and the diseases caused by worms. There are also much shorter parts dealing with governmental regulations for communicable diseases, the general principles of infectious pathogenesis and immunity, the production and use of antiserums and vaccines, serum disease, the examination of infectious materials, and the rôle of disinfection and sterilization. The purpose of the book is to tell physicians in private as well as official positions what they should know about communicable diseases, their causes, modes of spreading, diagnosis, prevention and treatment in order to fulfil adequately their responsibilities in such matters. The book meets this purpose well. It gives in concise and well balanced form the best scientific and practical knowledge about communicable diseases of the day.

A Text-Book on Pharmacognosy. By George Edward Trease, B.Pharm., Ph.C., Lecturer on Pharmacognosy in the University College of Nottingham. With contributions by H. H. Barber, B.Sc., Ph.D., F.I.C., W. H. Heading, B.Sc., Ph.C., A.I.C., H. M. Hirst, M.P.S., and A. H. Ware, Ph.C. Cloth. Price, $6. Pp. 653, with 187 illustrations. Baltimore: William Wood & Company, 1935.

This book aims to cover the requirements for examinations in pharmacognosy in most English speaking countries. It is of interest especially to pharmacists. It has, however, a cultural atmosphere, which related sciences and medicine must admire. In part I, chapter I gives a short historical introduction and shows the importance pharmacognosy has had in world affairs. Chapter II gives some interesting and instructive facts about the cultivation of medicinal plants in England. Chapter III discusses enzymes succinctly. Chapter IV gives a brief outline of vitamins. In chapter V the subject of hormones is equally brief but down to date. Chapter VII deals with the process of collection, drying and storage of plants. Chapter VIII discusses historically London commerce in crude drugs. Chapter

IX deals with plant principles and their extraction. Chapter X gives tests for plant phenols as an aid in drug identification, and chapter XI is concerned with the microscope as an aid to drug identification. Chapter XII deals with ultraviolet rays as an aid to drug identification. Part II (chapters XIII-XX) deals with drugs of vegetable origin and comprises the greater part of the book. Classification and its variations by different authorities is discussed. Part III deals with drugs of animal origin and includes hirudo, cantharis, mel, cerae, coccus, lacca, os sepiae, oleum morrhuae, cetaceum, adeps sevum, adeps lanae, gelatinum, moschus and extractum fellis bovis. A glossary of Latin terms is appended. While the book is primarily intended for students of pharmacy, it is of a sufficiently scholarly nature to be valuable to those medical men who wish a brief, readable, accurate book on pharmacognosy. Such subjects, however, as enzymes, vitamins, hormones, ergot and digitalis are treated in too brief a fashion to be of value to those wishing more than factual statements. Practically no references to original work are given.

Handbuch der experimentellen Pharmakologie. Begründet von A. Heffter. Ergänzungswerk. Herausgegeben von W. Heubner, Professor der Pharmakologie an der Universität Berlin, und J. Schüller, Professor der Pharmakologie an der Universität Köln. Band I. Enthaltend Beiträge. Von H. H. Meyer und L. Lendle. Paper. Price, 32 marks. Pp. 265, with 37 illustrations. Berlin: Julius Springer, 1935.

The editors plan to publish a new series of volumes on experimental pharmacology, supplementing Heffter's handbuch. This, the first supplemental volume, is concerned with the digitalis bodies and related glucosides and is written by Lendle of Leipzig. A ten page introduction on the nature and objects of experimental pharmacology is written by the dean of European pharmacologists, Hans Horst Meyer of Vienna. Part of Heffter's first volume appeared in 1919, and the final volume has not yet appeared. The chapter on digitalis, written by Straub of Munich, contained the literature up to 1914, but it was not published until later. From the subsequent twenty years, Lendle quotes about 1,400 authors and perhaps 3,000 or more articles. This massive, nebulous, cumulus cloud of research fog must be condensed and refined before it is of much value to the ordinary doctor and also to many who are not ordinary. This refining process, however, is not the task of the immediate editor. His work is to collect and present the data in a form useful to other research workers, who will do the refining. The preparation of the work has required unlimited patience and perseverance, and it is well done. It is a source book, a work not only pro patria but pro mundo. The work includes every phase of the digitalis problem, including the most recent chemistry, standardization, the action of the related glucosides, conditions modifying its activity, actions on the various tissues or extracardial actions, absorption, fate and elimination. One may find how digitalis action is influenced by acetylcholine, histamine, the barometer, fever or high altitude, and the effective doses for various animals. The volume is primarily of interest to research workers who must have it; but physicians interested in the basic facts of pharmacology and the source of therapeutic procedures in the use of digitalis will find it a mine of information.

Nutrition. By Margaret S. Chaney, Ph.D., Professor of Home Economics, Connecticut College, and Margaret Ahlborn, M.S., Professor of Food Economics and Nutrition, Kansas State College of Agriculture and Applied Science. Cloth. Price, $3. Pp. 436, with 55 illustrations. Boston: Houghton Mifflin Company, 1934.

The usefulness of this excellent textbook on nutrition, planned for home economics courses in colleges and normal schools, extends to all interested in the relation of nutrition to health, from which point of view the book has been developed. The subject matter is interestingly and simply presented, requiring only a minimum background of organic chemistry and physiology for thorough understanding. The interest of the reader is sustained and stimulated throughout. The rôle of each principal food essential in good nutrition is successively discussed in separate chapters. There are chapters devoted to food energy, basal metabolism, protein, minerals, vitamins, hygiene of the digestive tract, nutrition during the reproductive period, optimal nutrition during infancy and childhood, and the selection of an adequate dietary. Suitable references are listed at the end of each chapter. The appendix, including the more important useful data, is particularly comprehensive and practical. The methods of animal experimentation applicable to vitamin testing are outlined. The book splendidly prepares the adult to care intelligently for his own nutritional needs as well as those of the entire family group. A better understanding of nutrition and a better state of nutrition should result from the publication of this exceptional work.

Thrombose und Embolie: Kritische Betrachtungen und Untersuchungen zur Frage der Thrombose und Embolie, unter besonderer Berücksichtigung der sogenannten "blanden Fernthrombose" und tödlichen Lungenembolie. Von Dr. med. Rudolf Geissendörfer, Assistenzarzt der Chir. Univ. Klinik Breslau. Mit einem Geleitwort von Prof. Dr. R. Stich. Boards. Price, 9 marks. Pp. 159. Leipzig: Johann Ambrosius Barth, 1935.

This monograph embodies the results of a critical consideration of the thrombosis embolism question as discussed in recent German literature, more particularly progressive bland or aseptic thrombosis and pulmonary embolism. The author discusses all aspects of the supposed increase in fatal pulmonary embolism some years after the war. When all the factors concerned are considered and analyzed, especially the ages of the patients in the various statistics of thrombosis and embolism, the conclusion seems warranted that at the most the alleged increase is small indeed, if there has been any at all. There are chapters on the relations between the blood current, the blood chemistry and the endothelium in thrombosis, on the diagnosis and treatment of thrombosis, and of massive pulmonary embolism as well as their prophylaxis. The monograph will interest those who wish to follow the growth of a better understanding of the problems of thrombosis and embolism.

Diseases of the Skin. By Richard L. Sutton, M.D., Sc.D., LL.D., Professor of Dermatology, University of Kansas School of Medicine, and Richard L. Sutton Jr., A.M., M.D., L.R.C.P., Assistant in Dermatology, University of Kansas School of Medicine. Ninth edition. Cloth. Price, $12.50. Pp. 1433, with 1,321 illustrations. St. Louis: C. V. Mosby Company, 1935.

In this edition Sutton, with the aid of his son, has followed the general plan of the previous editions. The excellence of the work is revealed by a careful examination of its contents. Twenty-eight cutaneous entities not included in the previous editions are described. Although many of the descriptions of conditions in the text are brief, the information is ample to give a good idea of the basic points necessary to identify the entity and there is a profuse number of excellent reproductions of photographs to aid in the visualization of the disease. There are also numerous excellent photomicrographs to amplify many of the histologic descriptions presented. Each description is followed by a list of references and the authors have made a sincere effort to make this list complete, thus making it possible for one desiring more detailed information on a particular condition to have pertinent references at hand.

Kønshormonernes Betydning for fysiologiske og pathologiske Tilstande i Corpus Mammæ: En klinisk og eksperimentel Studie. Af E. Dahl-Iversen, Dr. med. To Forelæsninger udarbejdet til en Konkurrence om et Professorat i Kirurgi ved Københavns Universitet. [Significance of sex hormones for physiology and pathology of breast. Clinical and experimental study.] Paper. Pp. 55, with 22 illustrations. Copenhagen: J. Jørgensen & Co., 1934.

Here are two lectures prepared for and delivered in a competition for a professorship in surgery at the University of Copenhagen. The sex hormones of the hypophysis and ovary are discussed competently in relation to physiologic and pathologic conditions of the mammary gland. Earlier work and the author's own experiments on the action of the ovarian hormone on the mamma are described and the resulting changes in animals compared with conditions in so-called chronic cystic human mastitis. Whether cancer develops more frequently in women with cystic mastitis than under other conditions cannot be answered on the basis of the information obtained, according to the author.

Mouth Infection: Clinical Histories. By Oliver T. Osborne, M.A., M.D., F.A.C.P. Cloth. Price, $2. Pp. 119. New Haven, Conn.: The Author, 1934.

Dr. Osborne has been for a good many years convinced that infections of the teeth and gums are of the greatest importance in relationship to various general conditions affecting the human body. This is essentially the same conception as that of focal infection. The present book is planned to emphasize his point

of view and to support it by the presentation of a considerable number of case reports. These are presented in two or three lines each and, frankly, because of this simple presentation are not especially convincing. The second portion of the book concerns tonsillar infection, and the third portion Vincent's infection or trench mouth. There are also brief essays on the adenoids, the tongue and the tooth brush. The volume is suggestive and exceedingly well written. Even discounting its overemphasis on the mouth as a source of general danger to the body, its value cannot be gainsaid.

Medicolegal

Malpractice: Sponge Left in Pelvic Cavity.—The physician-defendant operated to remove a tumor from the plaintiff's pelvic cavity. He walled off the bowels by "retractor pads," on which were sewed pieces of tape about 14 inches long, the ends of which hung outside the patient's body, attached to surgical instruments. To arrest capillary hemorrhage in the operative area he "wadded up" other gauze pads and placed them against the bleeding tissue, but he "wadded up" with the gauze the tape attached to the pads or sponges so used, so that the ends did not protrude outside the body. The patient had been on the operating table about one hour and thirty-five minutes when the anesthetist reported that the patient was showing signs of shock and advised that the operation be completed as soon as possible. The peritoneum had already been completely sutured, when a nurse reported that one sponge was missing. Immediately the peritoneal sutures were removed and for about five minutes a search was made for the missing sponge, but it could not be found. About ten weeks after the operation the patient passed through her rectum a sponge similar to those used to arrest bleeding. She sued her physician, and a judgment was rendered in her favor. Her physician then appealed to the district court of appeals, fourth district, California.

The appellate court called attention to the fact that, in the absence of an express contract, a physician does not warrant a cure. He represents only that he has the ordinary training and skill possessed by physicians practicing in the same or similar communities and that he will employ such training, skill and care in the treatment of his patient. A physician who holds himself out as a specialist in the treatment of a certain organ, injury or disease is bound to bring to the aid of a patient employing him that degree of skill and knowledge which is ordinarily possessed by those who devote special study and attention to that particular organ, injury or disease in the same general locality, having regard to the state of scientific knowledge at the time. The evidence, said the appellate court, indicates that the physician-defendant was a specialist in abdominal operations.

On behalf of the patient-plaintiff, a physician testified that good practice in the locality where the operation was done required a physician to retain manual control of sponges used to arrest bleeding in operations such as the one here involved or else to bring the end of a tape attached to each sponge to the outside of the patient's body and to have it attached there to a metal ring or a surgical instrument. It is admitted, said the court, that the defendant did not use this method in operating; that of itself is sufficient to support the trial court's finding of negligence; it is evidence that the physician-defendant did not use the care and skill used by physicians performing similar operations in the same or similar communities. But the number of witnesses who testified for the defendant exceeded the number who testified for the plaintiff, and the defendant insisted that the evidence as to the correctness of the methods employed by him so greatly preponderated in his favor as to overcome completely the evidence offered on this question on behalf of the plaintiff. The district court of appeals pointed out, however, that a case cannot be decided in an appellate court on the numerical strength of witnesses; conflicts of evidence are settled in the trial court and a judgment cannot be reversed where there is competent and material evidence in the record to support it.

The appellate court was not impressed by a suggestion made on behalf of the plaintiff that her evidence disclosed numerous things that could have been done, but that were not done, to relieve the operative shock and to permit a prolongation of the search for the lost sponge until it was found and removed. The physician-defendant was confronted with a great emergency. His patient was in a very serious condition, her life was in danger, and the element of time was most important. Under such circumstances, the physician had to rely on his own skill, knowledge and best judgment in choosing the course to pursue. Nevertheless, the judgment of the trial court in favor of the patient-plaintiff was supported by the evidence concerning the manner in which the physician-defendant used sponges to arrest bleeding, and the judgment was accordingly affirmed.—*McLennan v. Holder (Calif.), 36 P. (2d) 448.*

Evidence: Roentgenograms as Public Records; Admissibility.—In September 1929 the defendant insurance company issued a policy of insurance on the life of Mattie E. Suggs. She died, April 13, 1930, in the state tuberculosis sanatorium at Clinton, Okla. The insurer denied liability, and her beneficiary brought suit. From a judgment for the beneficiary, the insurer appealed to the Supreme Court of Oklahoma.

Because of the Oklahoma statute relating to privileged communications, the trial court refused to permit a physician who had attended the insured to testify that he had treated her for tuberculosis in July, prior to her application for insurance. In that application she had denied that she had ever had tuberculosis and asserted that she had received no medical attention within the five years preceding it. The refusal of the trial court to admit this testimony, said the Supreme Court, constituted reversible error. The insured, in her application for insurance, expressly waived all provisions of law prohibiting a physician from disclosing in court information acquired in examining or attending his patient. This waiver was binding on the beneficiary of the deceased, the plaintiff in this case, and the testimony of this physician should have been admitted.

In the course of the trial, the insurance company offered in evidence the record and history of the insured as made and kept by the nursing bureau of the Oklahoma City health department. The record included roentgenograms of the lungs, made before the deceased applied for insurance. To prove its authenticity the superintendent of the nursing bureau testified that it was a public record. She testified, however, that the record was not made by her but by other nurses in the department. The insurance company contended that the record, as a public record, was admissible. The trial court, however, refused to admit it. This refusal, the Supreme Court held, was proper. The preliminary facts necessary to be shown in order to admit roentgenograms in evidence had already been stated by the court, the court said, in *Bartlesville Zinc Co.* v. *Fisher,* 60 Okla. 139, 159 P. 476:

> The admission of x-ray plates in evidence rests fundamentally on the theory that they are the pictorial communication of a qualified witness who uses this method of conveying to the jury a reproduction of the object of which he is testifying; this being true, the x-ray plates must be made a part of some qualified witness' testimony and the witness should qualify himself by showing that the process is known to himself to give correct representations, and that it is a true representation of such object.

No such showing was made with respect to the roentgenograms proffered in this case.

For the reasons stated, the judgment of the trial court in favor of the beneficiary was reversed and the cause was remanded for a new trial.—*National Life & Accident Ins. Co. v. Roberson (Okla.), 36 P. (2d) 479.*

Society Proceedings

COMING MEETINGS

National Medical Association, New Orleans, Aug. 11-17. Dr. C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, Secretary.
Northern Minnesota Medical Association, Duluth, Aug. 12-13. Dr. Oscar O. Larsen, Detroit Lakes, Secretary.
North Pacific Pediatric Society, Seattle, August 9-10. Dr. F. H. Douglass, 509 Olive Street, Seattle, Secretary.
Washington State Medical Association, Everett, Aug. 12-14. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Wyoming State Medical Society, Lander, Aug. 12-13. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama Medical Association Journal, Montgomery

4: 373-408 (May) 1935

Diagnosis, Treatment and Prevention of Tuberculosis. J. A. Myers, Minneapolis.—p. 373.

Surgical Treatment of Duodenal Ulcer, with Especial Reference to Acute Perforation. J. M. Donald, Birmingham.—p. 384.

Simultaneous Infection with Typhoid and Malaria. C. Thorington, Montgomery.—p. 389.

Heart Disease. R. O. Russell, Birmingham.—p. 390.

The Doctor in Some of His Relations to Life Insurance. C. Lull, Birmingham.—p. 392.

American Journal of Cancer, New York

24: 1-254 (May) 1935

*Histogenesis of Lymphosarcomatosis. J. C. Ehrlich and I. E. Gerber, New York.—p. 1.

Neoplasm Studies: I. Cells of Melanoma in Tissue Culture. C. G. Grand, R. Chambers and Gladys Cameron, New York.—p. 36.

Primary Carcinoma of Liver with Hypoglycemia. D. N. Beers and J. J. Morton, Rochester, N. Y.—p. 51.

Pulmonary Asbestosis: III. Carcinoma of Lung in Asbestosilicosis. K. M. Lynch and W. A. Smith, Charleston, S. C.—p. 56.

Lymphosarcoma with Ovarian Involvement in a Child. R. B. Wright, Baltimore.—p. 65.

Bilateral Carcinoma of the Breast: Report of Two Cases. O. N. Meland, Los Angeles.—p. 69.

Primary Carcinoma of Jejunum: Case Report. F. Proescher and J. Muir, San Jose, Calif.—p. 72.

Primary Carcinoma of Adrenal: Report of Case. S. W. Donaldson and S. C. Howard, Ann Arbor, Mich.—p. 75.

Carcinoma of Pancreas in Say's Pine Snake, Pituophis Sayi. H. L. Ratcliffe, Philadelphia.—p. 78.

Effect of Methylene Blue on Oxygen Consumption and Respiratory Quotient of Normal and Tumor Tissue. J. J. Jares, Rochester, N. Y.—p. 80.

Tumors of the Jaws. C. F. Geschickter, Baltimore.—p. 90.

Histogenesis of Lymphosarcomatosis.—Ehrlich and Gerber found that studies of material from eighteen cases of lymphosarcomatosis revealed varied histologic pictures, which could be grouped into three main types on the basis of the morphologic characteristics of the predominating cell type in each case. There were found, first, cases in which large, pale cells in reticular arrangement predominated. Then there occurred a group composed of mixed cells, partly reticular, as in the former group, and partly free. The morphology of these free cells resembled that of immature large lymphocytic cells. Finally, cases were encountered in which the lymphosarcomatous tissues were composed predominantly of free cells, either of the immature or mature lymphocytic type. These three types were termed, for descriptive purposes, reticular, intermediate and lymphocytic, respectively. These types were found to correspond in their essential morphologic features to the immature, intermediate and mature cells resulting from normal differentiation of the cytoplasmic reticulum along lymphopoietic lines. This similarity indicated that the histogenesis of this disease consists of progressive lymphopoietic differentiation of the cytoplasmic reticulum. This process is confined chiefly to the cytoplasmic reticulum of lymphatic tissues. Lymphopoiesis, as it occurs in lymphosarcomatosis, manifests blastomatous characteristics. These are indicated by the unrestricted growth of the tumor masses and the atypism of the cells. Lymphosarcomatosis arises in a region of lymph nodes, from which it extends to other regions of lymphatic tissue and other organs in progressive fashion. This spread occurs by direct local extension and by metastasis by way of the lymphatics and the blood stream. In addition, there occurs autochthonous formation of lymphosarcomatous foci in many centers of lymphatic tissue. This autochthonous origin is evident in partially involved nodes, in which intermediate stages in the formation of these foci from local reticulum cells may be observed, and in the diffuse involvement of the malpighian follicles of the spleen in two cases. As a result of these modes of spread, many cases of lymphosarcomatosis show, in their late stages, a widespread involvement of the lymphatic tissues (with the exception of the spleen) and of other organs. The origin of lymphosarcomatosis simultaneously in various lymph nodes in one region, the autochthonous mode of spread and the tendency toward restriction to one type of tissue separate this disease from the true sarcomas. Lymphosarcomatosis bears certain resemblances to lymphadenosis, such as identical histogenesis, restriction to lymphatic tissue and systematization. Nevertheless, the focal origin of the former, the more aggressive character of its growth, the focal involvement of lymph nodes and the limited systematization serve to characterize lymphosarcomatosis as a blastomatous disease of lymphatic tissue, in contrast to the hyperplastic character of lymphadenosis. From an oncologic point of view, lymphosarcomatosis may be classified as a blastomatous disease in the group of hemoblastoses.

American Journal of Public Health, New York

25: 531-680 (May) 1935

Reaction of Familial Contacts to Scarlet Fever Infection. J. E. Gordon, G. F. Badger, G. B. Darling and Sarah S. Schooten, Detroit.—p. 531.

Specific Expenditures and Personnel of Official Health Agencies in Certain Cities. J. W. Mountin, Washington, D. C.—p. 545.

Trend in Public Health Nursing. Pearl McIver, Washington, D. C.—p. 551.

Laboratory Examinations of Milk Handlers. E. K. Borman, D. Evelyn West and F. L. Mickle, Hartford, Conn.—p. 557.

Recent Studies on Psittacosis. K. F. Meyer, B. Eddie and I. M. Stevens, San Francisco.—p. 571.

*Studies of Correlated Human and Bovine Brucelliasis; Statistical and Serologic. R. V. Stone and E. Bogen, Los Angeles.—p. 580.

Effectiveness of Radio in Health Education. C. E. Turner, Vivian V. Drenckhahn and Maria W. Bates, Cambridge, Mass.—p. 589.

Use of Convalescent Measles Serum to Control Measles in a Preparatory School. J. R. Gallagher, Pottstown, Pa.—p. 595.

Sanitation of Mountain Playgrounds with Respect to Contamination of Streams. C. G. Gillespie, Berkeley, Calif.—p. 599.

Public Health Education Technics of Special Experiences: Newspapers. W. F. Higby, San Francisco.—p. 605.

*Virulence Tests for Typhoid Bacilli and Antibody Relationships in Antityphoid Serums. J. F. Norton and J. H. Dingle, Kalamazoo, Mich.—p. 609.

Semiautomatic Bacteriologic Dilution Bottle Filler. P. S. Prickett, Evansville, Ind.—p. 618.

Use of Toxoid Unprecipitated, Toxoid Precipitated and Toxin-Antitoxin Flocculi. W. H. Park, New York.—p. 620.

Diphtheria Studies: II. Use of Intradermal Injections of Toxin-Toxoid Mixtures in Diphtheria Immunization. W. E. Bunney, Lansing, Mich.—p. 623.

Studies of Correlated Human and Bovine Brucelliasis.—Stone and Bogen show that the ingestion of raw milk obtained from cows infected with contagious abortion and showing positive tests for agglutinins to Brucella abortus in their blood is responsible for the development of similar agglutinins in the blood of some consumers. This has been found to occur in about 8 per cent of those continuously exposed to the ingestion of heavily infected raw milk but varies with the duration of exposure, the amount of infection in the herd and the amount of the raw milk so consumed. No particular sex or age susceptibility to this infection has been found. No effect of tuberculosis or other disease on the development of such agglutinins is apparent, except insofar as they affect the amount of exposure to the infected milk. The development of such agglutinins has not been found to exercise any marked effect on the course of the tuberculosis. More than half of the patients developing agglutinins to Brucella abortus give no other manifestation of the infection and, therefore, come well within the groups described as subclinical, asymptomatic or purely serologic brucelliasis. About one eleventh of them manifest clinical symptoms warranting a diagnosis of undulant fever, and an additional group present other symptoms that might be attributed to the same cause. The disease manifestations are, however, comparatively mild, conforming, therefore, to the bovine type of infection, as described by Theobald Smith, rather than to the more virulent types that are frequently described from caprine or porcine sources. It constitutes, however, a definite disease entity and cannot be disregarded.

Virulence Tests for Typhoid Bacilli.—Norton and Dingle place particular emphasis on the measurement of the protective action of the antiserums in an attempt to determine whether there is a correlation of such activity with some known and easily determined property of the antiserums and whether this property may be correlated with antigenic components of the organisms being studied. Methods for determination of virulence of typhoid bacilli and for measurement of protective action of antityphoid serums are presented, together with preliminary data obtained by these methods. Intracerebral injection into mice is recommended for measurement of the relative virulence of strains of the typhoid bacillus. This method of injection has given more satisfactory results than the intraperitoneal route. Intracerebral injection of organisms combined with intraperitoneal injection of antiserums is suggested as a method for measuring the protective value of these serums against typhoid bacilli. The data so far obtained do not justify definite conclusions but serve to indicate the feasibility of the technic and a possible correlation between virulence, H and O agglutinins and protective activity of the antityphoid serums.

American Review of Tuberculosis, New York

31: 499-600 (May) 1935

Modern Concepts on Collapse Therapy of Tuberculous Pulmonary Cavities. B. P. Potter, Secaucus, N. J.—p. 499.
Artificial Pneumothorax in Treatment of Progressive Minimal Pulmonary Tuberculosis. J. A. Myers and Ida Levine, Minneapolis.—p. 518.
Decomposition of Tuberculoprotein, Starch and Gelatin by Dry Grinding. C. H. Boissevain, Colorado Springs, Colo.—p. 542.
*Comparison of Antigenic Properties of Defatted Tubercle Bacilli and Their Derived Proteins. C. H. Boissevain, Colorado Springs, Colo.—p. 547.
*Intracutaneous (Mantoux) Tuberculin Reaction: Comparative Study of Positive and Negative Reactors. M. Paretzky, Los Angeles.—p. 553.
Local Skin Reactions in Measles and Scarlet Fever in Relation to Intracutaneous Tuberculin Reaction. J. D. Pilcher, Cleveland.—p. 568.
Tuberculosis Among University Women. Ruby L. Cunningham, Berkeley, Calif.—p. 576.
Administrative Problems in the Case Finding of Tuberculosis: Routine Tuberculin Testing of School Children with X-Rays of Positive Reactors. Ethel D. Owen, Fresno, Calif.—p. 584.
How to Determine the Emphasis of a Community Tuberculosis Program. B. Marquette, Cincinnati.—p. 591.

Antigenic Properties of Defatted Tubercle Bacilli.—Boissevain tested the activity of decomposition products of the tubercle bacillus in producing hypersensitiveness in guinea-pigs to find the exact stage at which this activity disappears. Varying quantities of all the antigens examined were injected into a series of guinea-pigs to determine the minimal amount necessary to cause the appearance of hypersensitiveness to tuberculin. After three weeks the guinea-pigs were tested with different dilutions of water-soluble tubercle protein to determine the degree of hypersensitiveness that had been established. It was found that water-soluble protein obtained from ground bacilli, from hydrolyzed bacilli or from filtered culture mediums, all have the same tuberculin activity. Doses of from 1 to 40 mg. of defatted tubercle bacilli make guinea-pigs hypersensitive to 0.1 cc. of a 0.01 per cent solution of tuberculoprotein. The same doses of the insoluble residue obtained by grinding make guinea-pigs hypersensitive to 0.1 cc. of a 1 per cent solution. It was not possible to make guinea-pigs hypersensitive to a solution of 1 per cent tuberculoprotein by the injection of from 10 to 100 mg. of any water-soluble or alkali-soluble protein or peptone derived from the tubercle bacillus.

Intracutaneous (Mantoux) Tuberculin Reaction.—Paretzky found that a comparison of numerically almost equal groups of positive and negative tuberculin reactors who belonged to the same families showed that both diagnosis and prognosis were considerably more unfavorable for the negative group. The "dosage" of the infection and the length of exposure were found to be factors of great importance which had influenced the developments among the negative reactors who later showed evidences of tuberculous disease. The negative reactors who remained nontuberculous were either removed from the source of the infection or had acquired a positive tuberculin reaction. In accordance with these observations the author practices in his work, as a prophylactic measure, early interruption of exposure, as much as possible, in all cases (with all kinds of contacts, positive and negative) and especially in cases of massive infection. Special attention is paid to negative reactors if for some reason they remain exposed to infection; they are frequently reexamined and are otherwise closely watched.

Annals of Surgery, Philadelphia

101: 1139-1298 (May) 1935

Malignancy of Gallbladder. J. F. Erdmann, New York.—p. 1139.
Cystic Disease of Breast. P. Klingenstein, New York.—p. 1144.
Brachial Plexus Block Anesthesia. T. B. Rhone, Orange, Calif.—p. 1153.
*Lugol's Solution in Acute Secondary Parotitis. D. J. Leithauser and M. O. Cantor, Detroit.—p. 1171.
Treatment of Salivary Fistula by Irradiation. U. V. Portmann, Cleveland.—p. 1175.
Hyperthyroidism in the Aged. H. M. Clute and N. W. Swinton, Boston.—p. 1181.
Malignant Neoplasm of Thyroid. T. A. Shallow, W. T. Lemmon and E. Saleeby, Philadelphia.—p. 1190.
End Results of Thyroid Surgery. C. H. Frazier and J. Johnson, Philadelphia.—p. 1195.
*Operability of Carcinoma of the Stomach. V. C. Hunt, Los Angeles.—p. 1200.
*Sarcoma of the Stomach: Report of Nine Cases. G. T. Pack and G. McNeer, New York.—p. 1206.
Primary Perforated Jejunal Ulcer. B. C. Smith, New York.—p. 1225.
Acute Intestinal Obstruction. F. H. Amendola, New York.—p. 1250.
Diastasic Perforation of Normal Cecum: Resulting from Obstruction of Colon. D. V. Saeltzer and G. K. Rhodes, San Francisco.—p. 1257.
Herniorrhaphy Using a Living Fascial Flap. R. P. Wadhams and V. Carabba, New York.—p. 1264.
Appendixes Found as Contents of Femoral Hernia. H. K. Shawan and R. Altman, Detroit.—p. 1270.

Compound Solution of Iodine in Acute Parotitis.—Leithauser and Cantor administered compound solution of iodine orally in ten cases of acute secondary parotitis. The drug is well tolerated and may be given in large and repeated doses for days. In the more serious cases compound solution of iodine was also administered by hypodermoclysis in saline solution. Three cases followed spinal anesthesia; two followed ether; two followed gas, and one followed a local anesthetic. The fact that three cases followed spinal and one local anesthesia tends to disprove the contention that pressure over Stensen's duct is responsible for this complication. In every case in which a culture was made from Stensen's duct, either a Staphylococcus aureus or albus was recovered, except one which was a diplococcus. One case was bilateral; Staphylococcus aureus was recovered from the left Stensen's duct and Staphylococcus albus from the right. There were no signs or symptoms of iodism in any of the cases treated. Two cases went to abscess formation. There were no deaths.

Operability of Carcinoma of Stomach.—Hunt states that, even though the diagnosis of carcinoma of the stomach has reached a high degree of accuracy with roentgen examination, the operability of malignant lesions remains very low. In the author's 149 patients operated on during the last ten years, the operability in terms of resection was 36.2 per cent of the patients explored. The operability has varied but slightly. The operability in terms of the curative procedure of resection or partial gastrectomy in patients with cancer of the stomach has varied from 4.8 to 33 per cent. Operability in terms of resection has in recent years increased materially in the hands of those particularly interested in the surgical treatment of carcinoma of the stomach. The employment of methods in recent years for the rehabilitation of patients with carcinoma of the stomach previous to surgical exploration has contributed to reduction of the risk of gastric resection. Repeated gastric lavage for gastric retention, the intensive administration of dextrose and of physiologic solution of sodium chloride to combat dehydration and restore the normal balance in the chemistry of the blood and the preoperative treatment of secondary anemia by blood transfusion are most important in the improvement of the general condition of the patient before operation and in the reduction of the risk of surgical procedure. Partial gastrectomy for malignant disease can be accomplished within a mortality rate of 10 per cent, if not extended beyond what may reasonably be accepted as operable lesions. Total removal of the stomach with anastomosis has been successfully accomplished in a number of instances. The mortality rate of the procedure will of necessity always be high, but the risk at times may be justifiable. Total removal of the stomach for cancer is justified only in those cases in which the stomach

can be sufficiently mobilized to provide access to the esophagus so that an accurate anastomosis can be made between the esophagus and the jejunum. Palliative surgical procedures are seldom warranted when clinical manifestations of metastasis or inoperability exist. On exploration the determination of inoperability should preclude palliative operations unless the reasonably anticipated palliation justifies the risk. Prognosis following gastric resection depends on whether or not the resection has been sufficiently wide to include not only the primary lesion but any and all involved regional lymph nodes, and on whether undetectable metastatic lesions are present elsewhere at the time of operation. Only through investigation of the significance of digestive symptoms in the adult patient by competent roentgen examination may the future operability of carcinoma of the stomach be increased. An opportunity exists to increase the curability of this disease, and it is probable that this will come about through its earlier recognition and not through extension of operability through higher gastric resection or total gastrectomy. There is a justifiable mortality for gastric resection for malignant disease which will vary with the individual surgeon, but as a general working rule this should seldom exceed the percentage prospect of cure.

Sarcoma of the Stomach.—Pack and McNeer report nine cases of sarcoma of the stomach, consisting of four cases of myosarcoma, three of primary gastric lymphosarcoma and two of generalized lymphosarcomatosis with secondary involvement of the stomach. Sarcomas comprise 1 per cent of all gastric tumors. The sexes are equally involved. The average age of the patients is 46 years. Some of the tumors are symptomless. The greater number of patients present an upper abdominal tumor without definite gastric distress. Obstructive symptoms are infrequent. Pain occurs only in the presence of ulceration of the mucosa. The average duration of symptoms is nine and a half months. Sarcomas of the stomach are difficult to distinguish from carcinomas by roentgen studies, although horizontal filling defects and the persistence of gastric peristalsis in the presence of a definite lesion are suggestive. Partial gastrectomy is the procedure of choice for the localized tumors and is especially successful in exogastric sarcomas. The gastric lymphosarcomas are extremely radiosensitive and respond favorably to carefully planned radiation therapy.

Archives of Pathology, Chicago

19: 611-768 (May) 1935

*Endocardial Tuberculosis. R. D. Baker, Durham, N. C.—p. 611.
Renal Changes Following Biliary Obstruction, Decompression and Operation on Biliary Tract. M. M. Lieber and H. L. Stewart, Philadelphia. —p. 636.
*Histologic Studies on Spleen in Cases of Leukemia. R. H. Jaffé, Chicago.—p. 647.
Vital Staining of Microglia. L. S. King, Boston.—p. 656.
Relation of Allergy and Lesions in Animals Vaccinated with B C G. B. J. Clawson, Minneapolis.—p. 673.
Absence of Chemotropism in Lymphocytes. H. M. Dixon and M. McCutcheon, Philadelphia.—p. 679.

Endocardial Tuberculosis.—Baker states that endocardial tuberculosis is most frequently encountered at necropsy as a part of generalized miliary or disseminated tuberculosis. Scattered tubercles ranging from microscopic size to a diameter of 3 or 4 mm. may occur in any part of the endocardium, including the valves. They probably arise by implantation through the coronary arteries and directly from the blood of the heart. Rarely, they may be polypoid or pedunculated. Endocardial tuberculosis may also develop from the extension inward of pericardial and myocardial caseous masses, which may ulcerate and produce generalized tuberculosis. With staining for elastic tissue it can be shown that a myocardial tuberculous process bulging into the cavity of the heart but apparently covered with a smooth endocardial surface is in some cases really invading the endocardium. Tuberculous endocarditis as a diffuse process, somewhat analogous to rheumatic and pyogenic endocarditis, has no especial affinity for the line of closure of the valves and does not produce thrombotic vegetations. Endocardial tuberculosis may interfere with cardiac function in the rare instances in which caseous nodules involve the valves. Sclerosis of the endocardium and healed fibrous or calcified valvular lesions noted at necropsy were not shown to be due to the toxic action of a tuberculous process elsewhere in the body.

Histologic Studies on Spleen in Leukemia.—Jaffé observed that in cases of leukemia the trabeculae of the spleen and the inner layer of the capsule are often involved by the leukemic process. In the larger trabeculae the leukemic tissue develops underneath the endothelium of the veins and, less frequently, in the adventitia of the arteries. In the smaller trabeculae the peripheral portions are gradually incorporated into the pulp, and nests of leukemic cells appear also in the center of the trabeculae. The cells in the center seem to originate locally from the fibrocytes. The changes have been observed in cases of acute stem cell leukemia, acute, subacute and chronic myelosis, acute and chronic lymphadenosis, monocytic leukemia and giant cell leukemia.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

16: 257-320 (May) 1935

Radiotherapy Combined with Diathermy and Galvanization in Infantile Paralysis (Bordier Method). H. Bordier, Lyon, France.—p. 263.
Thermal Changes Produced in Tissues by Local Applications of Radiothermy. Carol B. Pratt and C. Sheard, Rochester, Minn.—p. 268.
Penetrative and Selective Heat Effects of Short and Ultrashort Waves: Experimental Study with Unicellular Organisms and with Electrolytes. C. K. Gale, New York.—p. 271.
Short Wave Therapy. W. J. Turrell, Oxford, England.—p. 278.
Prognosis in Cancer, with Especial Reference to Visible Neoplasms. E. N. Kime, Indianapolis.—p. 282.
Roentgen and Radium Therapy in Thyrotoxicosis. J. T. Stevens, New York and Montclair, N. J.—p. 287.
Underwater Therapy in Arthritis. J. D. Currence, New York.—p. 291.
Indications for Hydrokinesitherapy: Underwater Therapeutic Exercise. A. B. Olsen, Battle Creek, Mich.—p. 295.

Archives of Surgery, Chicago

30: 731-910 (May) 1935

Cancer of the Cheek (Buccal Mucosa): Study of Ninety-Nine Cases with Results of Treatment at the End of Five Years. H. E. Martin, New York, and O. H. Pflueger, San Francisco.—p. 731.
*Osteogenesis: Experimental Study. J. D. Bisgard, Omaha.—p. 748.
Fabella (Sesamoid in Lateral Head of Gastrocnemius). C. J. Sutro, M. M. Pomeranz and S. M. Simon, New York.—p. 777.
*Epilepsy Secondary to Head Injury. M. A. Glaser and F. P. Shafer, Los Angeles.—p. 783.
Injuries to the Crucial Ligaments. H. Milch, New York.—p. 805.
Lymphogranuloma Inguinale: Its Relation to Stricture of the Rectum. W. Rainey and W. H. Cole, St. Louis.—p. 820.
Combined and Separate Effects of Bile, Pancreatic Secretion and Trauma in Experimental Peptic Ulcer. A. M. Graves, San Antonio, Texas. —p. 833.
*Chronic Ulcerative Colitis with Associated Carcinoma: Progress in Management. J. A. Bargen and C. F. Dixon, Rochester, Minn.—p. 854.
Hepatic Function: III. Effect of Cholecystectomy on Hepatic Function. A. Cantarow, E. Gartman and G. Ricchiuti, Philadelphia.—p. 865.
Effect of Jejunal Feeding on Gastric Acidity. A. A. Appell, Toronto. —p. 875.
Effect of Enemas on Intestinal Motility. H. E. Carlson, St. Paul, and T. G. Orr, Kansas City, Mo.—p. 881.
Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; J. Verbrugge, Antwerp, Belgium; A. B. Hepler, Seattle; R. Gutierrez, New York, and V. J. O'Conor, Chicago.—p. 884.

Osteogenesis.—In his experiments on dogs, Bisgard found no new bone in the periosteal beds which had been treated thoroughly with Zenker's solution. Regeneration progressed normally from the periosteum when only the ends of the rib were treated with the solution, but there was definite retardation of absorption of old bone and of proliferation of new bone at the ends of the costal stumps. Transplanted treated costal segments had the appearance of encapsulated foreign bodies. They were entirely necrotic and formed no new bone but were considerably invaded by granulation tissue. In contrast, the untreated transplants, also necrotic, were extensively invaded by granulation tissue, were rapidly undergoing absorption and had given rise to some new bone. Much more new bone was present in the grafts covered with periosteum and on the cortical surfaces, which presumably had a covering of periosteum.

Epilepsy Secondary to Head Injury.—A statistical study of cases of head injury reveals a wide discrepancy in the percentage of incidence of generalized epilepsy following trauma of the head. Glaser and Shafer observed that the most likely incidence is in the neighborhood of 2.5 per cent in the cases

of more severe head injury. Epilepsy does not develop after minor, but follows only severe, head injury and generally occurs only in cases in which there has been fracture of the skull. Generalized epilepsy may develop within the first ten days after head injury, provided the injury is of excessive severity. Posttraumatic epilepsy occurs most frequently from six months to two years after the injury, less frequently from two to seven years afterward and infrequently from seven to twenty years afterward. In attributing the epilepsy to trauma, all extraneous factors must be ruled out, particularly a history of convulsions prior to the trauma. Thorough physical and neurologic examinations should be made in order to establish that there is no organic, physical or neurologic disease and no mental condition other than the effects of the trauma causing the convulsions. In cases in which the first convulsion occurs at the time of the injury, a detailed history is necessary to make certain that the injury did not happen because of the onset of an attack of idiopathic epilepsy. Convulsive seizures developing in the first six months after minor head injuries should be considered psychoneurotic in origin, and every effort should be made to rule out such an etiology before the condition is diagnosed as true epilepsy. The authors know of no method of preventing the occurrence of generalized epilepsy following head trauma other than the utilization of the accepted methods of treatment of the original injury. Unless there is some special contraindication, they believe that encephalograms should be made in every case of posttraumatic epilepsy, both because they may have definite therapeutic value and because they may give further information of marked value in outlining advisable steps for treatment; in some cases they have shown evidence that open operation should be performed.

Chronic Ulcerative Colitis with Associated Carcinoma.—Bargen and Dixon discuss twenty-five cases of carcinoma and two of lymphosarcoma proved at pathologic examination, in which the tumor developed in the course of severe chronic ulcerative colitis. The ages of the patients at the time of discovery of the carcinoma ranged from 21 to 69 years. Many of the younger patients had presented clinical and pathologic evidence of colitis for years. A sudden change of symptoms with unusual bleeding and local pain in patients who had been under repeated observation was considered to be indicative of the onset of carcinoma. For localized, relatively early carcinoma of grades 1 and 2, in cases in which colitis is under fair control, radical extirpation of the diseased colon with the carcinoma offers the patient a good chance of recovery. In two cases polypoid excrescences in the rectum were fulgurated when the colitis was under control, and this treatment alone has been adequate so far, since the small carcinomas have not recurred. This suggests the importance of prompt proctoscopic observation with any change in symptoms and the importance of grading specimens removed for biopsy. In rapidly developing carcinoma among younger patients, it is more likely that the disease will be of the fulminating type and the carcinoma multiple and of a high grade of malignancy. An attempt to resect the growth locally when active or even quiescent colitis is present seems futile. It seems best to resect the entire section of the colon involved by colitis and containing one or more carcinomas. The authors believe that it is more than accidental that their five surviving patients had adequate treatment with specific antibody solution (concentrated serum) or vaccine prepared from the diplostreptococci of chronic ulcerative colitis, or both, prior to any attempted surgical procedure and that in each case the active stage of colitis was under control when surgical intervention was undertaken. Contrasted with this, only seven of the twenty-two patients who died were given serum or vaccine, and only three of them to the point of control of symptoms. In these three cases as healing took place the factor responsible for the healing lost control and the mucosa grew wildly as new hyperplastic tissue.

Florida Medical Association Journal, Jacksonville

21: 421-468 (April) 1935

Tuberculin in Treatment of Arteriosclerosis. W. H. Spiers, Orlando.—p. 431.
Laryngofissure for Cancer of the Larynx: Report of Two Cases. W. Patterson, Tampa.—p. 434.
Torsion of the Mesentery. D. McEwan, Orlando.—p. 437.

Journal of Allergy, St. Louis

6: 311-414 (May) 1935

Clinical and Serologic Study of Relationship of Giant (Ambrosia Trifida) and Low (Ambrosia Artemisiaefolia) Ragweed Pollen. R. A. Cooke, A. Stull, S. Hebald and J. H. Barnard, New York.—p. 311.
Studies on Active Substance of Grass Pollen: I. Activation of Small Molecular Weight Active Group Through Colloidal Substances. C. E. Benjamins, H. A. E. v. Dishoeck and J. L. M. German, Groningen, Holland.—p. 335.
Skin Exciting Activity of a Timothy Pollen Extract as Measured by Its Content of Three Nitrogen Fractions. H. Osgood and R. S. Hubbard, Buffalo.—p. 349.
*Treatment of Ragweed Hay Fever with Ultrafiltered Extract: Preliminary Report. W. C. Spain and Florence E. Sammis, New York.—p. 357.
Intradermal Antiserum Tests: Bacterial Specific Response Not Dependent on Serum Sensitization But Often Confused with It. L. Foshay, Cincinnati.—p. 360.
*Analysis of Allergic Factor in Recurrent Paroxysmal Headaches. W. T. Vaughan, Richmond, Va.—p. 365.
Significance of Tobacco Reactions in Allergic Children. R. Chobot, New York.—p. 383.
Hypersensitiveness to Insulin. Florence E. Sammis, New York.—p. 387.
Cottonseed Allergy and Gin. H. Stevens, Washington, D. C.—p. 393.
Asthma Produced by Susceptibility to Unusual Allergens: Linseed, Insects, Tobacco and Chicory. C. Jimenez-Diaz and B. S. Cuenca, Madrid, Spain.—p. 397.
Studies on Relation of Adrenal Glands to Allergic Phenomena: II. Therapeutic Effect of Strychnine Stimulation of Adrenal Medulla in Asthma. M. B. Cohen and J. A. Rudolph, Cleveland.—p. 404.
New Tourniquet and an Improved Testing Needle. H. Markow, Brooklyn.—p. 406.

Treatment of Ragweed Hay Fever with Ultrafiltered Extract.—Spain and Sammis made an attempt to determine clinically the value of ultrafiltered ragweed extract in the treatment of ragweed hay fever patients. In nineteen ragweed hay fever cases the comparisons, by the intracutaneous test, of the activity of residue and filtrate dilutions with the dilutions of the standard extracts as controls yielded results similar to those previously reported. The residue solutions showed a degree of activity quite comparable with those of the standard dilutions, while the filtrate was active only in its most concentrated or in its slightly diluted (1:5) form. From the results obtained in their series of nineteen cases it would seem that on ultrafiltration of the ragweed pollen extract the immunizing and constitutional producing capacity is retained in the residue fraction. Further study of its use in hay fever is being made.

Allergic Factor in Recurrent Paroxysmal Headaches.—Vaughan states that true migraine is often due to food allergy. Upward of 70 per cent of recurrent paroxysmal headaches without organic pathologic conditions are associated with allergy. At least 7 per cent of a homogeneous community were found to have suffered at one time or another from recurrent headaches due to specific food idiosyncrasy. Such headaches appear to be more frequent in allergic persons than in the population at large. Factors that appear to influence results obtained in the treatment of allergic migraine are: the period of supervision, the cooperation of the patient, the occurrence of headaches with the catamenia and a proper utilization of the available diagnostic measures (skin test, the food diary and the leukopenic index). The evidence would indicate that with the allergic diagnostic and therapeutic methods now available, properly employed, treatment should be successful in at least 70 per cent of migraine cases.

Journal of Bacteriology, Baltimore

29: 437-562 (May) 1935

Crystal Violet Agar as Differential Medium for Staphylococci. G. H. Chapman and C. Berens, New York.—p. 437.
Chitinovorous Bacteria: Preliminary Survey. Anne G. Benton, Poughkeepsie, N. Y.—p. 449.
Studies on Small Colony Variants of Staphylococcus Aureus. Edith Louise Swingle, Chicago.—p. 467.
Investigation of Bacillus Pasteuri Group: III. Systematic Relationships of Group. T. Gibson, Edinburgh, Scotland.—p. 491.
Morphology of Mycobacteria. Janet McCarter and E. G. Hastings, Madison, Wis.—p. 503.
Studies on Cultural Requirements of Bacteria: V. Diphtheria Bacillus. J. H. Mueller, Boston.—p. 515.
Decomposition of Organic Matter in Sea Water by Bacteria: I. Bacterial Multiplication in Stored Sea Water. S. A. Waksman and Cornelia L. Carey, New Brunswick, N. J.—p. 531.
Id.: II. Influence of Addition of Organic Substances on Bacterial Activities. S. A. Waksman and Cornelia L. Carey, New Brunswick, N. J.—p. 545.

Journal of Clinical Investigation, New York

14: 293-372 (May) 1935

*Optimal Diet in Promoting Nitrogen Gain in Nephrosis. Shih-Hao Liu and Hsien-I Chu, Peiping, China.—p. 293.

Effect of Venesection on Arterial, Spinal Fluid and Venous Pressures, with Especial Reference to Failure of Left and Right Heart. H. F. Robertson and F. Fetter, Philadelphia.—p. 305.

Micrococcus Tetragenus Infection: I. Review of Literature, Report of Nonfatal Case with Septicemia, Meningitis and Arthritis and Bacteriologic Studies. H. A. Reimann, Minneapolis.—p. 311.

Fate of People with Unexplained Gastric Anacidity: Follow-Up Studies. A. L. Bloomfield and W. S. Polland, San Francisco.—p. 321.

*Relation of Upper Respiratory Infections to Rheumatic Fever in Children: I. Significance of Hemolytic Streptococci in Pharyngeal Flora During Respiratory Infection. May G. Wilson, Eugenia Ingerman, R. O. DuBois and B. M. Spock, New York.—p. 325.

Id.: II. Antihemolysin Titers in Respiratory Infections and Their Significance in Rheumatic Fever in Children. May G. Wilson, G. W. Wheeler and Marguerite M. Leask, New York.—p. 333.

Id.: III. Seasonal Bacterial Flora of Throat in Rheumatic and Nonrheumatic Children. G. W. Wheeler, May G. Wilson and Marguerite M. Leask, New York.—p. 345.

Variability of Nonhemoglobin Iron. T. G. Klumpp, New Haven, Conn.—p. 351.

*Effect of Protein on Carbohydrate Tolerance of Two Cases Having Combined Diabetes Mellitus and Pernicious Anemia. N. Jolliffe, H. Brandaleone and H. Most, New York.—p. 357.

Blood Pressure Changes in Normals and in Hypertensives After Intravenous Epinephrine and Histamine. W. Gordon and G. Levitt, Chicago.—p. 367.

Diet in Promoting Nitrogen Gain in Nephrosis.—In two patients with the nephrotic type of chronic interstitial nephritis, one aged 13 years and the other 35, Shih-Hao Liu and Hsien-I Chu studied the nitrogen balances and plasma proteins in relation to diets. With a moderate protein intake, nitrogen retention could be progressively increased by the addition of calories in the form of carbohydrate and fat. The first patient showed a maximal nitrogen gain at 88 calories per kilogram of body weight and the second patient retained the greatest amount of nitrogen at 62 calories per kilogram of body weight. Further increase in caloric intake resulted in no increases in the nitrogen retained. When these patients were fed the optimal number of calories, raising the protein intake increased the nitrogen retention somewhat. The maximal nitrogen retention was reached when 75 Gm. of protein was fed in case 1 and 100 Gm. in case 2. These amounts corresponded to 2.5 and 1.8 Gm. per kilogram of body weight and constituted from 12 to 13 per cent of the total calories. Feeding more protein did not increase the positive nitrogen balance. The first patient showed a slightly increasing nitrogen retention as higher percentages of animal protein were fed, while in the second patient the nature of protein made no distinct difference. While it is impractical to feed a purely animal protein diet, a diet with at least 50 per cent of its protein of animal origin would seem to ensure the best nitrogen gain. Changes in plasma proteins were slow, even in the presence of marked nitrogen retention. The proteins remained at about the same level in the first case. In the second case they slowly increased during the early part of the study. In the second patient, in whom albuminuria decreased as the study progressed, there was no significant change in the albuminuria in relation to the level of protein intake.

Infections of the Upper Respiratory Tract and Rheumatic Fever.—Wilson and her associates observed a large group of rheumatic children. Their observations do not support the conception of a specific etiologic relation between respiratory infections and rheumatic fever. The possibility that the rheumatic child is constitutionally vulnerable to both infections is indicated by the frequency of a simultaneous onset of rheumatic activity and respiratory infection (following a common exciting factor). The greater susceptibility of the rheumatic child to respiratory infection compared with that of a nonrheumatic brother or sister is suggested. Their observations tend to minimize the diagnostic significance of hemolytic streptococci in the pharyngeal flora. The specificity of "streptococcic" respiratory infections based solely on bacteriologic criteria does not appear convincing in view of the observed comparable carrier rate of hemolytic streptococci in the pharyngeal flora of sick and well children. Immunologic studies show a rise in the titer of antistreptolysin following respiratory infections unassociated with hemolytic streptococci in the pharyngeal flora. The etiology of the rheumatic sequels following scarlet fever is still controversial. During the authors' observations the occurrence of scarlet fever during severe carditis did not appear to influence the course of the latter. Respiratory infections in a rheumatic child seem to bear no more specific etiologic relationship to rheumatic disease than would be attributed to similar episodes occurring in the tuberculous child.

Diabetes Mellitus with Pernicious Anemia.—Jolliffe and his co-workers studied two subjects having combined pernicious anemia and diabetes over a hospital period of six and nine months, respectively. One patient entered in a state of severe diabetic ketosis and in a relapse of the anemia, and the other in a relapse of the anemia with many psychotic manifestations. Diabetes developed following treatment for the anemia by parenteral injection of liver extract, iron by mouth, and high caloric and high protein diet over a period of three months. The carbohydrate tolerance of both patients was studied on low and high protein diets, with the following conclusions: 1. High protein diets in the two cases markedly reduced the carbohydrate tolerance. This reduction in tolerance cannot be explained by an increase in calories or by the extra carbohydrate made available from the excess protein. 2. A simultaneous high carbohydrate diet apparently prevented the immediate deleterious effects of the excess protein from becoming apparent. Ultimate results were qualitatively similar to those observed in previous studies when low carbohydrate diets were employed. 3. The loss of carbohydrate tolerance as a result of the high protein diet is not temporary. The tolerance remained impaired in one subject for at least twenty-five days, and in the other for at least six months. 4. Insulin, when given in amounts sufficient to prevent either long continued or severe glycosuria, does not ward off the deleterious effect of excess protein in the diet.

Journal of Nutrition, Philadelphia

9: 533-644 (May 10) 1935

Blindness in Cattle Associated with Constriction of Optic Nerve and Probably of Nutritional Origin. L. A. Moore, C. F. Huffman and C. W. Duncan, East Lansing, Mich.—p. 533.

*Intestinal Stasis in Low Mineral Diets. Elizabeth Chant Robertson and M. Elizabeth Doyle, Toronto.—p. 553.

*Comparison of Antirachitic Potency of Cod Liver Oil and Irradiated Ergosterol on Curative and Preventive Basis. W. C. Russell, M. W. Taylor and D. E. Wilcox, New Brunswick, N. J.—p. 569.

Studies on Lactation: II. Technic for Studying Lactation in Rats. R. G. Daggs, Rochester, N. Y.—p. 575.

Id.: III. Effect of Various Dietary Principles on Lactation in Rats. R. G. Daggs and R. L. Tomboulian, Rochester, N. Y.—p. 581.

Effect of Grape as Compared with Other Fruit Juices on Urinary Acidity and Excretion of Organic Acids. Ruth Cowan Clouse, Chicago.—p. 593.

Experimental Studies on Hypophysis Cerebri: IV. Effect of Vitamin E Deficiency in the Female Albino Rat. S. I. Stein, Minneapolis.—p. 611.

Vitamin E Content of Eggs as Related to the Diet of the Hen and to Hatchability. G. L. Barnum, Washington, D. C.—p. 621.

Leukopenia and Anemia in Monkey Resulting from Vitamin Deficiency. P. L. Day, W. C. Langston and C. F. Shukers, Little Rock, Ark.—p. 637.

Intestinal Stasis in Low Mineral Diets.—Robertson and Doyle believe that the mineral poor diet used in their experiments on rats had in all probability a much lower mineral content than even the poorest human dietaries, but it is possible that the long continued consumption of a diet partially deficient in these factors may also lead to intestinal stasis. Constipation is a prevalent malady among civilized peoples. Many of the highly processed foodstuffs which are much favored, such as white flour and sugar, are very low in minerals. Approximately 50 per cent of the total calories in an average diet are derived from these two sources, and in the diet of the poor the percentage is often higher. The common method of boiling vegetables in which the cooking water is discarded no doubt leads to great losses of the mineral salts, such as potassium. Overindulgence in table salt also increases the potassium loss. The combination of all these factors may perhaps play a part in the production of constipation. It appears that both potassium and calcium salts must be added simultaneously to the deficient diet to prevent the stasis that would otherwise occur. Numerous investigators working on other physiologic problems have emphasized the importance of the potassium-calcium balance in maintaining the well being of animals. It is possible that

the high potassium content of some laxatives is a factor in their laxative effect, especially as the calcium intake is high. Human milk is more laxative than cow's milk. This may possibly be due to its higher potassium-calcium ratio.

Antirachitic Potency of Cod Liver Oil and Viosterol.—Russell and his associates found that the response of the white rat to antirachitically equivalent amounts of cod liver oil and viosterol, determined curatively, is the same when the two sources of the factor are fed on a preventive basis. This result is strikingly different from that obtained in the chicken, in which species the viosterol form of the antirachitic factor is much less effective than the cod liver oil form when compared on a preventive basis. The minimum protective dose on a preventive basis is between 2 and 10 curative units per fifty grams of ration. The unit or 1+ level, determined curatively, affords only partial protection when fed on a preventive basis.

Journal of Pediatrics, St. Louis

6: 603-742 (May) 1935

*Factors Influencing Effectiveness of Placental Extract in Prevention and Modification of Measles. C. F. McKhann, Arda A. Green and Harriet Coady, Boston.—p. 603.

Observations on Therapeutic Value of Specific Immune Serum in Experimental Poliomyelitis. E. W. Schultz and L. P. Gebhardt, Stanford University, Calif.—p. 615.

Aplastic Anemia Following Stovarsol (Acetarsone) Therapy. D. L. Smith Jr. and R. A. Lyon, Cincinnati.—p. 624.

*Masked Mastoiditis. H. Bloch and E. F. Merolla, Brooklyn.—p. 630.

Acute Lymphatic Leukemia in Childhood: Study of Sixty Cases, with Especial Reference to the Cytologic Characteristics of the Blood. S. D. Mills, Rochester, Minn.—p. 634.

Low Calcium Tetany of the New-Born: Review of Recent Literature and Report of Another Proved Case. J. L. Rothstein, New York.—p. 644.

Hemihypertrophy: Report of Four Cases. A. J. Scott, Los Angeles.—p. 650.

Stramonium Poisoning: Review of Literature and Report of Two Cases. R. E. Jennings, East Orange, N. J.—p. 657.

Dental Caries: Calcium and Inorganic Phosphorus Blood Serum Determination. C. G. Kerley, E. J. Lorenze Jr. and Emma R. Godfrey, New York.—p. 665.

*Encephalitis and Myocarditis in Fatal Case of Trichinosis: Report of Case in Fourteen Year Old Girl. M. B. Gordon, R. Cares and B. Kaufman, Brooklyn.—p. 667.

Clinical and Chemical Study of Nondiabetic Ketosis with Acidosis. D. C. Darrow and M. Katharine Cary, New Haven, Conn.—p. 676.

Allergic Reactions to Schick Tests After Toxoid Immunization: Report of Two Cases. H. J. Freedman, Boston.—p. 695.

Placental Extract in Prevention of Measles.—McKhann and his associates observed that placental extract can be prepared in large amounts and can be made available for the large scale prevention or modification of measles. Attempts to refine and concentrate the measles antibody have resulted in preparations of less potency than the extracts containing all the globulins. However, the refined preparations can be passed through Berkefeld filters and may therefore be deemed safer to use. The results in a series of 1,258 cases demonstrate that the refined extracts, although less active than the crude preparations, are still effective in the prevention or modification of measles. However, this number of tests is inadequate to permit the determination of the best fraction of the extract to use and the dosage required in children of various ages and at various stages of the incubation period of the disease. The scarlet fever and diphtheria antibodies in placental extract appear to be almost entirely in the pseudoglobulin fraction, whereas the measles and poliomyelitis antibodies appear to be distributed throughout several protein fractions. The tissue protein insoluble in acidified salt solution contains no diphtheria antitoxin but does contain the antibody neutralizing poliomyelitis virus. It has not been tested for activity against measles. Reactions following the injection of placental extract, although infrequent, appear to be due in some measure to the inclusion in the finished extract of variable amounts of a specific tissue protein. A method of preparation and administration of extract to eliminate reactions is at present under investigation.

Masked Mastoiditis.—Bloch and Merolla present the cases of 119 infants suffering from gastro-enteritis and otitis media as evidence in favor of the clinical entity of masked mastoiditis. These patients were admitted from the free dispensary the clientele of which is composed largely of underweight, undernourished infants. Their ages varied from a few weeks to 13 months. The clinical course of the disease revealed three stages: In stage 1 the nutritional progress of the infant was suddenly halted by fever. Examination revealed otitis media. Following myringotomy or spontaneous perforation of the eardrum, fever subsided and the few ounces lost were frequently regained. The ear drainage persisted. Stage 2 was characterized by occasional vomiting, an increase in the number of stools, which became slightly watery, a gradual loss of weight and a low grade fever. Stage 3 set in from several days to two or three weeks following the opening of the eardrum. The temperature rose from 3 to 5 degrees, and simultaneously the weight fell from 8 to 30 ounces. The infant then presented the common picture of acute intestinal intoxication. Diarrhea and vomiting became severe; dehydration was rapid; weight fell in spite of supportive therapy; anorexia was common; the infant was apathetic and rarely cried. Unoperated or late operated cases usually proceeded to athrepsia, cachexia and death. In some instances stage 1 was rapidly followed by stage 3. In another small group a milder course was observed, in which dietetic measures proved unavailing, whereas mastoid antrotomy resulted in rapid recovery. It is the authors' opinion that the mastoid infection set in coincident with stage 2; but the failure of the infants' resistance precipitated the profound toxemia of stage 3. The diagnosis of masked mastoiditis depended entirely on the clinical picture described. The classic symptoms and signs of mastoiditis were rarely present. The roentgen examination was not relied on, since many proved mastoid infections produced normal roentgenograms. The swelling of the posterior superior canal described by Lyman frequently occurred too late to be of value.

Encephalitis in Case of Trichinosis.—Gordon and his co-workers cite a fatal case of trichinosis in a girl, aged 14 years, who presented a predominating picture of encephalitis throughout the entire course. The three generally accepted diagnostic criteria of the disease were absent: gastro-intestinal symptoms, muscular tenderness and eosinophilia (until the day preceding death). Myocarditis, cerebral congestion, and edema and toxic encephalosis were found at necropsy. Studies of the diaphragm, psoas and rectus abdominalis disclosed heavy infestation by the parasites in the early stages. The changes in the brain were scant in proportion to the pronounced clinical picture of encephalitis. Blood studies of five members of the same family affected at the same time are presented. Trichiniasis of the right deltoid was found in a brother, who presented a transitory encephalitic picture and recovered.

Military Surgeon, Washington, D. C.

76: 229-288 (May) 1935

The Development of the Plan for Systematic Training of Officers of the Medical Department of the Army. R. U. Patterson.—p. 229.

Operative Mortality in Acute Appendicitis. L. B. Kline.—p. 246.

New Crusade. J. Voncken, translated by E. E. Hume.—p. 251.

Detachment of the Retina: New Surgical Diathermic Treatment. H. C. Maxwell.—p. 259.

Contact: Simple Method of Contact Printing. V. H. Cornell and R. M. Reeve.—p. 261.

The Civilian Doctor's Part in a National Military Emergency. G. A. McBride.—p. 266.

New England Journal of Medicine, Boston

212: 813-862 (May 2) 1935

Massive Collapse of Lung Following Childbirth: Report of Two Cases. M. F. Eades, Boston.—p. 813.

Undulant Fever: Two Cases Simulating Subacute Bacterial Endocarditis and Pulmonary Tuberculosis. N. Sidel and M. S. Segal, Boston.—p. 816.

Physician and Patient as a Social System. L. J. Henderson, Boston.—p. 819.

Management of Gonorrhea: III. Clinical Diagnosis of Gonorrhea in the Adult Female. The Neisserian Medical Society of Massachusetts.—p. 823.

Digest of the Twentieth Annual Report of the Massachusetts Department of Public Health. H. D. Chadwick, Boston.—p. 830.

212: 863-902 (May 9) 1935

Cancer of the Stomach: Analysis of One Hundred and Ninety-Five Cases with End Results. F. H. Lahey, N. W. Swinton and M. Peelen, Boston.—p. 863.

Study of Heart Disease Among Veterans: I. Clinical Classification of Five Hundred Cases. P. B. Matz, Washington, D. C.—p. 868.

Embolism from Saphenous Thrombophlebitis and Its Prophylaxis. J. B. Sears, Boston.—p. 874.

Skeleton of an Unknown Person. W. W. Fullerton, Brockton, Mass.—p. 876.

New Orleans Medical and Surgical Journal

87: 737-808 (May) 1935

Breast Feeding, with Especial Reference to Some of Its Problems. L. von Meysenbug, New Orleans.—p. 738.
Use of Sodium Evipal as an Intravenous Anesthetic. J. R. Veal, A. S. Hamilton and C. L. Farrington, New Orleans.—p. 743.
*Ringworm of Extremities Due to Allergic Unbalance. W. H. Browning, Shreveport, La.—p. 747.
Simple and Practical Classification of Irregular Uterine Hemorrhage. J. T. Witherspoon, New Orleans.—p. 751.
Agranulocytosis. J. E. Knighton Jr., Shreveport, La.—p. 755.
Differential Diagnosis Between Agranulocytic Angina and Acute Leukemia. W. S. Kerlin, Shreveport, La.—p. 759.

Ringworm Due to Allergic Unbalance.—Browning suggests that ringworm of the extremities is a complication of hypersensitiveness rather than that hypersensitiveness is a complication of ringworm disease. When the patient is placed in a state of "allergic balance," the primary lesion heals quickly without any treatment directed toward the trichophyton. Patients are examined as for other allergic conditions, especially allergic conditions of the skin. Microscopic examination is positive for a fungus in most cases. Most mild cases respond to the ordinary methods of treatment because it is probable that these methods restore an "allergic balance" to the affected parts. Thirty cases are presented, most of which were of a severe type, but the results obtained were excellent. Other allergic manifestations were present in a large proportion of the cases. All the patients were hypersensitive to many allergens. The patch test is usually negative unless there is a superimposed contact dermatitis. The use of trichophytin is unsatisfactory for diagnostic purposes. Improvement usually begins within two weeks, if the case has been correctly diagnosed and if instructions have been followed.

New York State Journal of Medicine, New York

35: 517-562 (May 15) 1935

General Anesthesia in Allergic Patients: Review of Two Hundred and Four Cases of Tonsillectomy and Radical Antrum Operations. Rose H. André and R. C. Grove, New York.—p. 522.
Treatment of Trichonoma Vaginalis with "Anayodin": Clinical Report. Margaret McAllister Janeway, New York.—p. 528.
Vaccination Preceding Colonic Operations as Protection Against Peritonitis. C. F. Dixon and J. A. Bargen, Rochester, Minn.—p. 529.
Public Health Aspects of a Venereal Disease Program for New York City. J. L. Rice, New York.—p. 533.

Ohio State Medical Journal, Columbus

31: 313-400 (May 1) 1935

Management of Common Duct Stone and Obstruction. F. M. Douglass, Toledo.—p. 329.
Treatment of Ambulatory Rheumatic Heart Disease. A. F. Kuhl, Dayton.—p. 331.
Epidemic Encephalitis. P. G. Tait, Toledo.—p. 335.
*Observations on Growth and State of Nutrition of Premature Infants Given an Antirachitic and Antiscorbutic Food. A. J. Horesh and G. R. Russell, Cleveland.—p. 339.
*Observations in Use of Irradiated Blood in Connection with Cancer. B. E. Hyde, Troy.—p. 349.
The Periodic Health Examination. L. N. Jentgen, Columbus.—p. 357.

Nutrition of Premature Infants Given Antirachitic and Antiscorbutic Food.—Horesh and Russell give the results they obtained in the feeding of fifty-three premature infants. Of these, eleven died and the remainder received at the hospital for an average of six months the same milk food, twenty-two from birth and twenty from the age of from 2 to 5 weeks. The milk food used was a powdered acid protein milk similar to casein and lactic acid milks and had a p_H of 4.6. Its acidity was obtained by adding 20 cc. of lemon juice to milk in which lactic acid has been produced by controlled bacterial fermentation. The lemon juice provided the antiscorbutic factor which has been found adequate for the cure of scurvy in infants. The fat of the milk is a mixture of animal and vegetable fats, including biologically tested cod liver oil, and has character numbers that are practically identical with those of human milk. The cod liver oil content of the milk is 3.8 cc. per quart. Carbohydrate, in the form of corn syrup, was added as deemed necessary to meet the carbohydrate and caloric requirements of the individual infants. Orange juice was administered in the second week, starting with a dose of 1 cc. daily and reaching a maximal dose of 15 cc. daily in the sixth week. Saccharated ferrous carbonate in a dose of 0.5 Gm. three times daily was started by the second week. The infants showed an excellent gain in weight and approximated closely the ideal weight as portrayed in Wetzel's standard curve. The average daily gain in weight was equal to and in many instances surpassed the average daily rate of gain of premature infants in the series of other observers. Excellent muscle development and tissue turgor was found in all cases. The incidence of gastro-intestinal disturbances of the so-called nutritional type was low and their duration was brief, the infants being free from purely nutritional disturbances during 98.6 per cent of the period of observation. While the incidence of respiratory infections was relatively high, their severity as judged by their duration was mild, the entire group of infants being actually free from respiratory infections 94 per cent of the time. Rickets was prevented in each instance as judged by weekly roentgenograms of the wrist and by monthly determinations of the blood serum calcium and inorganic phosphate. The physiologic anemia of premature infants was not prevented by the liberal administration of saccharated ferrous carbonate. The authors believe that the distinct qualities that make the milk a particularly valuable food for the rearing of premature infants are its high protein, high mineral, high vitamin and reduced fat content.

Use of Irradiated Blood in Cancer.—Hyde has accepted the present view that surgery, x-rays and radium are the only methods in use today that are of proved value in the attack on cancer. He uses x-rays in the form of a secondary irradiation. By the use of autogenous blood the cancer patient does not show a reaction and the normal or noncancer patient does. The use of these injections of blood in malignant disease produces benefit which warrants its use, but not by the untrained person. A spectroscopic difference has been demonstrated between the irradiated "cancer" blood and normal blood. The precipitate lowers the hemoglobin in the cancer blood and not in the normal blood. Not one patient in the author's 4,000 blood injections has shown a bad result. Internal and external cancers can be treated in the same way by intravenous injections. Dressings of irradiated blood have been applied to external cancer, and about the same amount of benefit has been noticed as was produced by intravenous injections. The skin does not have to be protected, as this blood appears to affect the cancer only. The fact that the blood reaction factor before cancer is demonstrable makes the method of value at that stage, since the use of this method of treatment may be prophylactic. No better results are obtained by using larger amounts of blood; about 7 cc. is enough. The author uses 20 cc. because it is a convenient amount to work with.

Philippine Journal of Science, Manila

56: 1-96 (Jan.) 1935. Partial Index

Occurrence of Bertiella in Man, Monkey and Dog in the Philippines. C. M. Africa and E. Y. Garcia, Manila.—p. 1.
Studies on Diastolic Blood Pressure in Beriberi Cases Admitted to the Philippine General Hospital During the Years 1932-1934. K. Sugino, Manila.—p. 21.
Ethnographic Study of Yogads of Isabela. R. E. Galang, Manila.—p. 81.

Psychoanalytic Quarterly, Albany, N. Y.

4: 227-370 (April) 1935

Claustrophobia. B. D. Lewin, New York.—p. 227.
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The Murders in the Rue Morgue. Marie Bonaparte, Paris, France.—p. 259.
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The Menstruation Complex in Literature. C. D. Daly, Naini Tal, India.—p. 307.
Three Brief Notations Relative to Castration Complex. H. A. Bunker Jr., New York.—p. 341.

Public Health Reports, Washington, D. C.

50: 595-632 (May 3) 1935

Relations of Sickness to Income and Income Change in Ten Surveyed Communities: Health and Depression Studies No. 1: Method of Study and General Results for Each Locality. G. St. J. Perrott and S. D. Collins.—p. 595.
Bacterial Content of the Kansas Dust Storm on March 20, 1935. Cassandra Ritter.—p. 622.

Rhode Island Medical Journal, Providence

18: 65-80 (May) 1935

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The Medical Expert. C. A. Walsh, Providence.—p. 66.
Twenty Years' Observation of Medical Questions Under Compensation Act. J. J. Donahue.—p. 69.
Correlation of Oral Infections with General Systemic Infections. J. L. Kendrick.—p. 74.

Southern Medical Journal, Birmingham, Ala.

28: 395-488 (May) 1935

Surgical Relief of Pain About the Head and Face. W. T. Coughlin, St. Louis.—p. 395.
Fractures of the Patella. W. C. Campbell, Memphis, Tenn.—p. 401.
Repair of Surface Defects, from Burns and Other Causes, with Thick Split Skin Grafts. J. B. Brown, V. P. Blair and L. T. Byars, St. Louis.—p. 408.
Suppuration of Dermoid Cyst of Ovary Following Labor. C. R. Robins, Richmond, Va.—p. 415.
Use of Bronchoscopy in Pulmonary Diseases. E. A. Looper, Baltimore.—p. 419.
Tularemia: Fatal Case of Typhoid Form Caused by Ingestion of Rabbit: Autopsy Report. H. G. Beck and W. C. Merkel, Baltimore.—p. 422.
Chronic Ulcerative Colitis. H. G. Rudner, Memphis, Tenn.—p. 429.
Autonomic Instability: Is It an Entity? J. S. Sweeney, Dallas, Texas.—p. 434.
Further Observations on Juvenile Diabetics and Hyperinsulinism. A. A. Herold, Shreveport, La.—p. 438.
When Is Insulin Dangerous? H. Hill, San Antonio, Texas.—p. 441.
Contact Dermatitis: Preliminary Investigation. M. F. Engman Jr., M. Moore and R. L. Kile, St. Louis.—p. 442.
Carotenemia and Carotenoderma. D. T. Gandy, Houston, Texas.—p. 444.
*Some Points in Early Diagnosis of Gastro-Intestinal Cancer. E. Jelks, Jacksonville, Fla.—p. 446.
Congenital Hypertrophic Pyloric Stenosis. B. C. Garrett, Shreveport, La.—p. 450.
Effect of Ketogenic Diet on Infections of Urinary Tract. A. L. Clark, H. D. Moor and D. G. Harrel, Oklahoma City.—p. 453.
X-Ray Diagnosis of Polyps, Cysts and Tumors of the Nasal Sinuses. C. Moore, Washington, D. C.—p. 456.
Diagnosis and Treatment of Sinusitis. W. L. Simpson, Memphis, Tenn.—p. 458.
Secondary Glaucoma. E. W. Burton, University, Va.—p. 461.
Theelin in Treatment of Gonococcic Vaginitis in Children. B. Reading, Galveston, Texas.—p. 464.
Nutritional Work Among Undernourished School Children. E. L. Timmons, Colorado Springs, Colo.—p. 466.
Infantile Physiopathology. E. Guajardo, Monterrey, Mexico.—p. 467.
Treatment for Neuropsychiatric Syndromes Employing "Twilight Narcosis." A. L. Skoog, Kansas City, Mo.—p. 468.
The Pellagra Problem in the South. C. D. Reece, Austin, Texas.—p. 473.
Hospital Teaching. R. Q. Goodwin, Oklahoma City.—p. 478.
Auxiliary Sterilizer. A. L. Atwood, Birmingham, Ala.—p. 481.

Early Diagnosis of Gastro-Intestinal Cancer.—Jelks states that emaciation, tumor, obstruction with persistent vomiting and severe hemorrhage, occurring in a person of the cancer age unquestionably indicate the presence of a malignant growth, but that, if the patient manifests such marked symptoms as these before treatment is instituted, his chance of recovery is slight and that, if progress toward cure is to be made, other and earlier occurrences in the patient's health life must be recognized. He lists seven of these which appear relatively early. 1. Although alternating constipation and diarrhea are apparently contradictory evidences, yet a period of constipation, followed by one of diarrhea, is very frequently a sign of cancer of the large intestine. The constipation is often thought to be characteristically progressive, but it is, in fact, when observed by the patient, usually intermittent until the final closing off of the alimentary canal is complete. 2. Vomiting sometimes occurs early in the progress of the growth. It likewise may, and usually does, come "in spells" a long time before complete obstruction develops. 3. Pain in the epigastrium or lower part of the abdomen, which the patient usually calls "indigestion" and which may or may not be related to the taking of food, should suggest the likelihood of a serious lesion in the digestive tract. 4. The patient often complains of a sense of fulness after eating and of distention following meals, or even at other times in the twenty-four hours. The discomfort from this distention may be referred to the epigastrium or to the lower half of the abdomen. 5. Sometimes one of the first evidences of the disease is loss of appetite. Anorexia is in no sense diagnostic, but it frequently suggests the correct solution of the patient's problem. 6. The presence of anemia, which may be recognized by the doctor or by the patient because of paleness or dizziness, is not an infrequent early sign of cancer, especially of the right intestine. 7. Occasionally a patient complains merely of weakness, which may be a very early sign of cancer and may result either from occult bleeding or from a general disturbance of the digestion.

Southwestern Medicine, Phoenix, Ariz.

19: 143-182 (May) 1935

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Present Day Conceptions of Childhood Tuberculosis. J. W. Amesse, Denver.—p. 151.
Evolution of Tuberculosis in Children. W. I. Werner, Albuquerque, N. M.—p. 157.
Traumatic, Slow, Intraperitoneal Hemorrhage with Delayed Surgical Shock: Report of Three Cases. W. L. Reid, Phoenix, Ariz.—p. 160.
The Young Doctor of Arizona. J. W. Huffman, Tucson, Ariz.—p. 162.
The Fighting Arizona Doctor: Brigadier General J. B. D. Irwin 1830-1917. (The Record of a Brilliant Surgeon Who Helped to Make Arizona Safe for the White Man). W. M. Thompson, Bisbee, Ariz.—p. 164.

Texas State Journal of Medicine, Fort Worth

31: 1-66 (May) 1935

Surgical Treatment of Pelvic Pain Due to Intractable Functional Dysmenorrhea and Inoperable Pelvic Lesions. J. A. Heyman, Wichita Falls.—p. 5.
Automobile Door Handle Injuries. H. H. Ogilvie, San Antonio.—p. 9.
Maximal Utilization of Pelvic Diaphragm Structures in Repairing Procidentia. A. L. McMurrey, Houston.—p. 11.
Carcinoid Degeneration of Appendix. G. A. Pagenstecher, J. M. Moore and H. N. Gonzales, San Antonio.—p. 15.
Peptic Ulcer: Its Complications. G. V. Brindley, Temple.—p. 18.
Blood Stream Infections. L. H. Reeves, Fort Worth.—p. 23.
Defense Mechanisms of Body in Blood Stream Infections. J. P. Simonds, Chicago.—p. 26.
Cerebral Injury Sequels: Their Diagnosis and Management. A. D'Errico, Dallas.—p. 28.
Clinical Photography as Valuable Adjunct to Radiology in Selected Cases. G. D. Carlson, Dallas.—p. 32.
Acute Bilateral Empyema. W. R. Snow, Abilene.—p. 34.
*Typhus-like Fever Contracted from Opossum Fleas: Preliminary Report. J. Chapman and A. A. Chapman, Sweetwater.—p. 36.
Diphtheria Immunization and Diphtheria Rate. J. W. Bass, Dallas.—p. 39.
County Children's Council and Its Value in the Public Health Program. E. W. Prothro, Sweetwater.—p. 43.
The Early History of the Texas Railway Surgeons' Association. W. A. Lee, Denison.—p. 45.

Typhus-like Fever Contracted from Opossum Fleas.—The Chapmans identified five cases of what they consider to be typhus fever of the endemic variety. In two cases, the only history of exposure was through fleas infesting opossums. That neither patient had typhus but some similar disease and that the patients had typhus but received the infection through some agent other than those at present recognized by students of the disease are possibilities which are disposed of, as the disease could have been only typhus or some other closely allied disease. Rocky Mountain spotted fever was eliminated from consideration by the type of eruption and absence of severe nervous and mental symptoms, and the exposure to the fleas of the opossums was the only probable source of inoculation. Opossums sometimes invade rat nests and may perhaps eat dead rats, since they devour other carrion. It would then be possible for the opossums to have become infested from dead rats or from rat nests. Also in substantiation of this possibility is the fact that fleas carry the virus as long as fifty-two days after the infective feeding, and further that the virus even multiplies within the fleas, so that it is not necessary to postulate a recent contact between the rats and rat nests and the opossums. The possibility is that opossums actually have typhus, as do rats, and that the virus was transmitted through the opossums' own ectoparasites rather than through adventitious fleas. Dyer's recent work has shown that woodchucks, house mice, meadow mice and white-footed mice all may have typhus, and it does not seem at all improbable that the opossum may also acquire the disease. Experiments are now under way to determine whether or not this is true.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

19: 241-304 (May) 1935

Pathogenic Problem of So-Called Critical Allergic Conjunctivitis: Specific Sensitization; Nonspecific Sensitization; Instability of Organic Colloids. H. Lagrange.—p. 241.
Trachoma: Recent Advances and the Principles of Prophylaxis. A. F. MacCallan.—p. 253.
Corneal Pitting. H. Herbert.—p. 261.
Bilateral Epithelioma of the Limbus in a Boy of Five: Case. A. H. Lowther.—p. 264.
*Early Ocular Sign in Facial Paresis. H. Cohen.—p. 267.
Additional Component of Convergence-Accommodation Reflex. H. Cohen.—p. 267.
Technic of Advancement and Tendon Lengthening in Strabismus Operations. W. B. I. Pollock.—p. 268.
New Strabismus Forceps. G. Handelsman.—p. 271.

Early Ocular Sign in Facial Paresis.—Cohen states that the following sign is present at an early stage, often before there is any demonstrable asymmetry of facial movement, and is late in disappearing when the nerve is recovering its function; e. g., in Bell's palsy. If a normal individual is told to "look upward but keep the eyes closed," the stronger contraction of the orbicularis palpebrarum, in keeping the eyelids together, masks the contraction of levator palpebrae superioris. If there is any weakness of the orbicularis palpebrarum, it can no longer antagonize the contraction of levator palpebrae superioris and the eye tends to open. This degree of weakness occurs in the early stages of facial paresis and late in the recovery stage. In the more marked degrees of facial paralysis in which the orbicularis palpebrarum is grossly affected, no closure of the eyes is possible and the facial paresis is evident.

British Journal of Radiology, London

8: 265-338 (May) 1935

Radiologic Study of Intrathoracic Lymphogranuloma and Lymphosarcoma. E. R. Williams.—p. 265.
Tissue Culture: III. Its Application to Radiologic Research. F. G. Spear.—p. 280.
Adhesive Applicator for Radium Therapy. A. S. Johnstone.—p. 298.
Radium Treatment of Epithelioma of the Penis. R. G. Hutchison.—p. 306.
Distribution of Radiation from Typical Penis Mold. H. M. Parker.—p. 315.
Ionization Chambers for X-Ray Dosage Measurement: II. H. I. Jones.—p. 318.
Right Sided Diaphragmatic Hernia: Case. G. B. Bush.—p. 333.

British Medical Journal, London

1: 863-908 (April 27) 1935

Thrombo-Angiitis Obliterans, with Especial Reference to Its Pathology and Results of Sympathectomy. E. D. Telford and J. S. B. Stopford.—p. 863.
Modern Views on Cancer Problem. J. P. Lockhart-Mummery.—p. 867.
Treatment of Tuberculous Pleural Effusions and Empyemas. R. R. Trail.—p. 870.
Major Hysteria. W. R. Russell.—p. 872.
Some Constitutional Dermatoses. J. T. Ingram.—p. 877.

1: 909-962 (May 4) 1935

Progress in Medicine During the Past Twenty-Five Years. W. Langdon-Brown.—p. 909.
Progress in Surgery During the Past Twenty-Five Years. C. Wallace.—p. 912.
Progress in Obstetrics and Gynecology During the Past Twenty-Five Years. J. S. Fairbairn.—p. 914.
Some Factors in Control of Poliomyelitis. R. W. Fairbrother.—p. 916.
Corneal Grafts: Report of Case. B. W. Rycroft and G. Handelsman.—p. 919.
Colloid Cyst of Third Ventricle of the Brain: Report of Case Operated on, with Recovery. J. E. Paterson and Margaret Leslie.—p. 920.
Funnel Chest and Pulmonary Tuberculosis. W. Pagel.—p. 922.
Primary Carcinoma of the Small Intestine. D. J. Harries and C. V. Harrison.—p. 923.

1: 963-1012 (May 11) 1935

Conservative Attitude in Treatment of Acute Pyogenic Infections. C. Donald.—p. 963.
Congenital Heart Disease. D. C. Muir and J. W. Brown.—p. 966.
Time Factors in the Pasteurization of Milk. I. W. Hall.—p. 972.
Erythema Nodosum and Focal Infection. L. B. Elwell.—p. 974.
Coronary Occlusion in a Patient Aged Twenty-Four Years. P. B. Fernando.—p. 976.

Glasgow Medical Journal

5: 185-248 (April) 1935

*Conjunctivitis: Clinical and Bacteriologic Investigation. I. C. Michaelson.—p. 185.
Iodism. S. Alstead.—p. 196.
Some Pages from the History of the Prevention of Malaria. M. Watson.—p. 202.

Conjunctivitis.—Michaelson investigated the bacteriology of conjunctivitis as it appears in Glasgow. He examined 433 patients with inflammation of the conjunctiva and lid margins. Cultures were made from the conjunctival secretion, and in ninety-seven cases direct examination of the smear was done as well. Sixty-two cases were bacteriologically negative. Some organisms are practically unconditionally infectious—that is, their presence in a culture taken from the conjunctiva indicates the cause of the inflammation. Gonococci, Koch-Weeks bacilli and Morax-Axenfield bacilli belong to such a category. Some organisms are facultative pathogens. Such are hemolytic Staphylococcus albus, Staphylococcus aureus, streptococcus, pneumococcus, pneumobacillus and Bacillus coli. The presence of these organisms may or may not be the cause of the disease. Determination of this will depend on their continued presence in repeated cultures and on the number of colonies present, and the latter factor will again be affected by the stage of the disease. A third group, consisting of Staphylococcus albus-nonhaemolyticus, Bacillus xerosis and Bacillus subtilis are only rarely pathogenic. They are very often found on the normal conjunctiva. Under favorable circumstances they may become pathogenic. A number of these cases were due to nonbacterial causes or to organisms which were overgrown in the culture medium by the staphylococcus. The bacteriologic results in the 371 patients with positive cultures are tabulated, together with the percentage of cases in which a pure infection was present. The author draws the following conclusions: 1. The great variation that exists between the bacteriology of conjunctivitis in Glasgow and other parts of the globe. 2. The importance of using cultures in the bacteriologic examination of the conjunctiva. 3. The fact that the pneumococcus, when found in the conjunctiva, is nearly always group IV. 4. The rareness of "pure Koch-Weeks infection" among adults. 5. The association between dental disease and conjunctivitis due to Streptococcus and Staphylococcus albus-haemolyticus. 6. The frequency of Morax bacillus infection in childhood. 7. The frequency with which the nonhemolytic staphylococcus is associated with corneal complications. 8. The serious chronicity of disorders of the lid following an attack of measles.

Journal of State Medicine, London

43: 249-310 (May) 1935

Cancer in Relation to Dyspepsia. M. J. Smyth.—p. 251.
Measures to be Adopted in Prevention of Diseases of Ductless Glands. S. Woodwark.—p. 262.
The Cancer Problem: Present Position with Regard to Prevention. P. P. Cole.—p. 272.
Public Health Aspects of Planning. E. G. S. Elliot.—p. 282.
A New Theory to Explain the Origin and Spread of Epidemic Diseases. W. G. A. Robertson.—p. 292.
*Mutations in the Tubercle Bacillus Under the Influence of a Tuberculin Sulphoguaiacolic Medium. A. Sartory, R. Sartory and J. Meyer.—p. 303.

Mutations in Tubercle Bacillus.—On the basis of laboratory studies with the tubercle bacillus the Sartorys and Meyer make the following conclusions: 1. The prolonged action of the complex substance present in a precipitate obtained by adding sulphoguaiacolic acid to Koch's tuberculin in the presence of antituberculosis serum to a medium for culture of tubercle bacillus has the property of penetrating the waxy sheath of the bacillus and acting on its cell elements. 2. There is then a morphologic modification of the bacillus which shows evolutionary forms, confirming the work of Roman and tending to show that the tubercle bacillus is more closely related to the fungi than the bacilli and could be reasonably classified among the actinomycetes. 3. Under the influence of this substance, loss of virulence is manifested in the medium itself before loss of acid-fastness. Of two virulent strains of human tubercle bacillus and two specimens of sputum with virulent tubercle bacilli received from Gordon Tippet, the authors have observed

that the human bacillus was less resistant to the prolonged action of the experimental medium than the bovine Vallee bacillus. The cultures of the third generation show forms very different from those of the normal tubercle bacillus. The bacilli are slender, very long, or in groups, resembling the characteristic form of the "grasbacillus." Most of them have already lost their acido-alcoholic property. They stain clearly and easily in blue by the Ziehl-Neelsen method and take on the form of branching filaments, endowed with a pronounced power of longitudinal growth. They are apt to divide transversely. The chromophilic and morphologic changes appear even in cultures twelve or fifteen days old. The tubercle bacillus, which they were able to isolate in a specimen sputum, was still less resistant to the influence of their cultural medium. The bacilli were already altered in a second generation and passed from the classic bacillary stage to a filamentous branching form with altered granules. The authors are unable to explain the different actions of the various tuberculous strains.

Lancet, London

1: 917-972 (April 20) 1935

*So-Called Acidosis Attacks: Plea for More Accurate Diagnosis. D. Paterson.—p. 917.
Study of Pneumococcic Pneumonia: III. Radiology of Pneumonia. D. T. Davies, H. G. Hodgson and L. E. H. Whitby.—p. 919.
*Experimental Hyperplasia of the Prostate. A. S. Parkes and S. Zuckerman.—p. 925.
Embolism of the Coronary Arteries. A. S. Hoseason.—p. 928.
Cullen's Sign in Ruptured Ectopic Gestation: Report of Two Cases. I. Smith and F. J. Wright.—p. 930.

So-Called Acidosis.—Paterson, in discussing the clinical meaning of acidosis or ketosis, states that the metabolism of the fats is profoundly influenced by the balance between fats and carbohydrates and that, if the carbohydrate in the form of starches and sugars is insufficient, the fat will be only partially broken down and acetone and diacetic acid will be formed. This may be brought about because the amount of carbohydrate absorbed is insufficient, or because too much fat is being given. The usual sequence of events, however, is that the carbohydrate present in the food and stored in the muscles and liver is suddenly called on and used up during an infection. The body, deprived of carbohydrate, looks to its store of fat for energy, and ketone bodies are formed as a result. In the majority of children acidosis or ketosis by itself leads to little or no change in the clinical picture. The symptoms attributed to "acidosis" are produced by the factor that produces the acetone—and this is usually an infection. The author concludes that the diagnosis of acidosis is a bad one and should never be used. Rather the process underlying this clinical picture should be thought of. This will rarely be found to be primarily dietetic, but rather infective in origin. A search for the source of the infection, usually nasopharyngeal, should be made, and this should be treated.

Experimental Hyperplasia of the Prostate.—In their experimental production of hyperplasia of the prostate Parkes and Zuckerman gave daily (from six to twenty-eight days) injections of an oil solution of estrogenic material to ten immature male rhesus monkeys, varying in weight from 1.7 to 4.8 Kg., and to one immature Guinea baboon. The total amount injected varied between 1.4 and 30 mg. Six normal rhesus monkeys and one Guinea baboon of equivalent weights were used as controls. The injected animals showed pronounced prostatic changes comprising (1) diminution in the number of true prostatic glands, with a corresponding increase in the amount of fibromuscular stroma, and (2) epithelial growth in the uterus masculinus. The latter change is very conspicuous, and the utricle acquires a large distended lumen lined by as many as twenty-five layers of stratified epithelium. The apparent reduction in the number of true prostatic glands, which are derived from the urogenital sinus, and the corresponding increase in the amount of prostatic fibromuscular tissue may be regarded as part of the general effect of estrogenic substance on the smooth muscle of the accessory reproductive organs. There is good evidence that the effects of the substance are suppressed by the simultaneous administration of progestin, the hormone of the corpus luteum.

Medical Journal of Australia, Sydney

1: 479-510 (April 20) 1935

An Address. A. M. Davidson.—p. 479.
The Treatment of Mammary Cancer. H. M. Moran.—p. 484.
*New Treatment for Anterior Poliomyelitis and Encephalitis and Its Experimental Basis. N. D. Royle.—p. 486.
Dangers of Indiscriminate Alkali Therapy. C. Sippe.—p. 488.
Survey of Mussels on Portion of the Australian Coast. D. H. Le Messurier.—p. 490.

1: 511-542 (April 27) 1935

Some Aspects of Medical Practice in Van Diemen's Land, 1825-1839. W. E. L. H. Crowther.—p. 511.
Bacillary Dysentery in Rockhampton, with an Account of Distribution and Type of Bacillary Dysentery in Other States. E. A. North.—p. 519.
Surgical Shock: Some Notes on Causation and Treatment. I. D. Miller.—p. 522.
Bovine Tuberculosis in Bovines. H. B. Rudduck.—p. 524.

Treatment for Anterior Poliomyelitis and Encephalitis.—The experiment of Royle shows that, following the high division of the cord in poliomyelitis, the activity of that organ can be maintained by the administration of ephedrine. He has observed in actual experiments that ephedrine constricts the capillaries. This is followed immediately by a dilatation of the arterioles and venules, so that there is an increase in blood supply. In large doses ephedrine so constricts the capillaries that it leads to a temporary cessation of blood flow in spite of the concomitant dilatation of the arterioles. The consequent anoxemia excites the cord to hyperactivity, as shown by the increase in plastic or postural tone. Small doses of ephedrine (0.0075 Gm.) increase the blood supply by what the author describes as the arteriolar capillary reaction: when the capillaries are constricted, the arterioles and venules dilate and, when the capillaries are dilated, the arterioles and venules are constricted. Ephedrine, in addition to keeping up the activity of the spinal cord, also controls wasting and, if given frequently enough, should be effective in the wasting following the edema of the cord in poliomyelitis. It would be easier to prevent the onset of paralysis than to deal with it when present, because the paralysis represents the result of damage to the anterior horn cells from edema. If this edema is long continued, the effects on the anterior horn cells may be permanent. Ephedrine should be given in the postparalytic stage to keep up the nutrition of the muscles until recovery has taken place. Four illustrative cases are presented.

South African Medical Journal, Cape Town

9: 211-252 (April 13) 1935

The Learned Profession of Medicine. P. D. Strachan.—p. 213.
Constitutional Therapy, with Particular Reference to Body Movements. I. P. Schabort.—p. 217.
The Induction of Abortion and Premature Labor: Indications. R. Theron.—p. 220.
Methods of Terminating Labor. A. E. Laubscher.—p. 222.
Clinical Experiences with Some Diseases Giving a Positive Typhus Reaction. H. H. Schulz.—p. 225.

Journal of Oriental Medicine, South Manchuria

22: 37-52 (March) 1935

Vital Staining of Tradescantia Virginica with One Hundred and Fifty Dyestuffs: Part I. Experiments on Vital Staining of Cilia Cells of Stamen. S. Hatano, H. Ryo, G. Nakamura and S. Takahashi.—p. 37.
Therapy of Psoriasis by Injection of Patient's Own Blood Which Has Been Treated by Ultraviolet Rays. M. Murayama.—p. 40.
Investigations on Amebic Dysentery: VIII. New Method for Cultivation of Endamoeba Histolytica. M. Yosezato.—p. 41.
Precipitation of Diphtheria Anatoxin by Alum: IV. Studies on Diphtheria Toxin. T. Komiyama.—p. 42.
Pneumonomycosis Aspergillina: Case. E. Kitabatake and K. P. Liu.—p. 43.
Spermatocele: Case. M. Motohata.—p. 44.
Anatomicopathologic and Statistical Study of Japanese, Koreans and Chinese in Manchuria (Based on Autopsy Material of Manchurian Pathologic Institute During Last Twenty-Three Years). Y. Matsuo.—p. 45.
Hygienic Problems of Water in Manchuria: I. Simple Method of Water Analysis on Spot, Especially Adapted to Water in Manchuria. T. Kodama, S. Suzuki and M. Takeyoshi.—p. 47.
Id.: II. Characteristics of Water in Manchuria. T. Kodama, S. Suzuki and M. Takeyoshi.—p. 48.
Case Illustrating Nonidentity of Pityriasis Rubra Pilaris, Lichen Ruber Planus and Lichen Ruber Acuminatus. K. Yajima.—p. 49.
Influence of Humanin on Smooth Muscles. T. Mineshita.—p. 50.
Blood Pictures of Smallpox Patients. T. Sada and G. Noda.—p. 52.

Presse Médicale, Paris

43: 713-736 (May 4) 1935

*Meningeal Spirochetosis and Meningotyphoid. J. Troisier, M. Bariéty, Mlle B. Erber, G. Brouet and Mlle J. Sifferlen.—p. 713.
Functional Examination of Respiration. Du Pasquier.—p. 716.

Meningeal Spirochetosis and Meningotyphoid.—Troisier and his collaborators report a case in which a man, aged 31, contracted an acute infection characterized by meningitis and marked conjunctival infection but without important intestinal symptoms. Lumbar puncture revealed pleocytosis, mixed cellular reaction and hyperalbuminosis. The patient suffered a relapse of his meningitis but eventually recovered. Serologic tests of the patient's blood showed a persistent negative reaction to the paratyphoid organisms and a persistently positive reaction to Bacterium typhosum. The complete absence of the usual symptoms of typhoid and the previous numerous (eight) vaccinations of the patient against typhoid raised questions as to the diagnosis. They isolated from the patient's urine between the fourteenth and seventeenth days a spirochete capable of producing a fatal icterus in the guinea-pig. Furthermore, they found that the blood serum of the patient possessed agglutinins and immunisins to Spirochaeta icterohaemorrhagica in high dilutions. They conclude that the meningitis was in reality spirochetal and that the typhoid bacillus infection was simultaneous but asymptomatic, owing to the previous antityphoid inoculations.

Policlinico, Rome

42: 1019-1074 (May 27) 1935. Practical Section

*Bassini's Modified Operation for Cure of Inguinal Hernia. G. Baggio.—p. 1019.
Chronic Intestinal Amebiasis: Prolonged Negativity of Laboratory Tests: Case. F. Pullé and G. Acanfora.—p. 1035.
Immunization by Ultrapeptones in Cancer. G. Carossini.—p. 1039.

Bassini's Modified Operation for Inguinal Hernia.—Baggio's technic, a modification of Bassini's operation for the cure of inguinal hernia, consists in freeing and excising the hernial sac and the hernial preperitoneal tissues through an incision made in the transversalis fascia, closure of the peritoneum with a lineal suture, reconstruction of the transversalis fascia in a layer by itself, and construction of a new posterior wall of the inguinal canal. In the construction of the posterior wall the author uses the abdominal rectus muscle, deprived of its sheath and sutured to Poupart's ligament by means of U sutures in a deep plane, and, fastened to this layer, the inferior edge of the small oblique and transverse muscles, joined with the upper half of the cremaster, in a more superficial plane, and the lower half of the cremaster in the superficial plane. Over this pad the spermatic cord is placed and then covered by the aponeurosis.

Prensa Médica Argentina, Buenos Aires

22: 851-892 (May 1) 1935

Tumoral Image of Pulmonary Tuberculosis. J. J. Beretervide, A. J. Heidenreich and G. L. Heidenreich.—p. 851.
*Etiology of Influenza. G. Elkeles.—p. 857.
Adenoids and Physicopsychic Development of Children. J. Mingo.—p. 863.
Essential Vomiting of Extragastric and Extra-Esophageal Origin in Infants. J. E. Virasoro.—p. 877.
Syphilitic Meso-Epididymitis: Case. R. I. Mathis and A. Marano.—p. 883.

Studies on the Etiology of Influenza.—Elkeles says that two investigations are important in connection with the etiology of influenza: those of Shope and Shope-Lewis and those of Smith and his collaborators. Shope and his collaborators proved that hog influenza, which is similar to influenza in man, develops by the combined action of a filtrable virus and of influenza bacilli. Smith and his co-workers succeeded in transmitting human influenza to ferrets by means of intranasal inoculation of a filtrable virus obtained from the washings of the throats of patients with influenza. The pathologic picture in the animal is characterized by the presence of fever, purulent rhinitis, general malaise, anorexia, loss of weight, a cough and other disturbances. The intranasal inoculation of hog influenza virus produces the same pathologic picture in ferrets. The author's experiments were carried out with the aim of ascertaining whether human influenza is transmissible to hogs. He found that the intranasal inoculation of the virus, as well as of cultures of the same virus previously inoculated in ferrets, produces in suckling pigs the same pathologic picture of experimental influenza as that reported by Smith and his co-workers in ferrets. The course of the disease in suckling pigs is more serious when the intranasal inoculation is made with a combination of virus and influenza bacilli. Bronchopneumonic foci are present in severe cases. The emulsion of tissues from bronchopneumonic lesions of suckling pigs, when reinoculated in ferrets, produces the same characteristic clinical and pathologic picture of experimental influenza. The inoculation of influenza bacilli alone, without virus, produces neither pathologic signs nor anatomic changes. The author states that a close relationship exists between the virus of human influenza and that of hog influenza and emphasizes the relation of the virus and the bacilli of influenza in the development of the disease. He advises the use of suckling pigs in further research work on influenza. Suckling pigs are more suitable than ferrets for research work and react to the inoculation more easily than the latter, with the development of bronchopneumonic lesions, which may be of a graver type if they are inoculated with the virus-bacillus combination.

Semana Médica, Buenos Aires

42: 1257-1328 (May 2) 1935. Partial Index

*Tuberculous Etiology of Erythema Nodosum. R. Cibils Aguirre.—p. 1257.
Oscillographic Curves. T. Martini and R. E. Curutchet.—p. 1262.
*Experimental Renal Calculosis in A Avitaminosis. A. Escudero and P. Bosq.—p. 1283.
Organic Hemiplegia in Pregnancy: Case. J. Bazán and F. A. Uranga Imaz.—p. 1287.
Giant Vesicular Ampullous Emphysema Simulating Total Pneumothorax: Case. I. R. Steinberg and D. Vivoli.—p. 1292.

Tuberculous Etiology of Erythema Nodosum.—Cibils Aguirre says that, in five out of eight cases of erythema nodosum, tubercle bacilli were identified by direct culture of material from the erythematous nodule in one, by intraganglionar inoculation in guinea-pigs in one, by successive reinoculations and cultures in all five and by histologic examination of sections of the nodules in one. In one of the three cases in which negative results were obtained the inoculation was made with material obtained by biopsy from the erythematous nodule fifteen days after the appearance of the nodule; in another case, the material used in the second inoculation was taken from a guinea-pig inoculated six months previously; in the third case, the experiments were stopped because of infection of the animals. The author says that the results of his work, by which the presence of tubercle bacilli in the erythematous nodules was verified, constitute the most complete bacteriologic proof of the tuberculous etiology of erythema nodosum.

Experimental Calculosis in A Avitaminosis.—Escudero and Bosq detected calcareous concretions in the renal tissues of five rats out of a group of six in which experimental A avitaminosis had been produced. The position of the calculi in the renal tissues as well as the aggregations of cells at certain points of the tissues seems to support the opinion that cellular aggregations play a rôle in the formation of renal calculi. The author believes that an intense congestion of the parenchyma, such as that observed in the renal parenchyma of the animal in which calculi were not as yet formed, is probably a disturbance as constant as xerophthalmia in A avitaminosis. He concludes that the formation of renal calculi should be considered one of the disturbances caused by A avitaminosis.

Archiv für Kinderheilkunde, Stuttgart

105: 1-64 (April 26) 1935. Partial Index

*Vaccination Resistance of the New-Born. J. von Lukács and D. von Móritz.—p. 1.
*"Latent Serum Reaction." E. Barla-Szabó.—p. 5.
Tissue Reactions in Serum Disease. E. Barla-Szabó.—p. 8.

Vaccination Resistance of the New-Born.—Von Lukács and von Móritz investigated why there are less positive vaccination reactions in the new-born than in older nurslings by comparing the reactions of newly born infants, vaccinated on the second day after birth, with the reactions of older nurslings. They found that newly born infants have a relative resistance to vaccination in that their reaction develops more slowly than that of the older nurslings. The papule becomes

relatively larger in the new-born, but the surrounding area is small. There is hardly any general reaction (fever) and the increase in weight is not impaired. The authors think that this deviation from the usual vaccination reaction is the result of a deficient antibody formation in the new-born.

Latent Serum Reaction. — Barla-Szabó employed Kaufmann's cantharidal test to demonstrate the latent serum reaction in twenty children, aged between 3 and 12 years, in whom the administration of normal horse serum caused no clinical manifestations. In some of the cases not even Kaufmann's tissue reaction disclosed changes. In other cases Kaufmann's test disclosed the reactivity of the organism to be altered in the same manner as in those cases in which the serum reaction causes clinical manifestations.

Beiträge zur Klinik der Tuberkulose, Berlin

86: 161-210 (April 25) 1935. Partial Index

Symptom Triad Situs Inversus, Bronchiectasis and Polyps of Nose. A. Behrmann.—p. 161.
*Serodiagnosis of Tuberculosis by Means of Flocculation Reactions. E. Dissmann and Maria Dissmann-Wosak.—p. 176.
*Therapy with Ultrashort Electric Waves, Particularly in Tuberculous Disturbances. O. Schedtler.—p. 189.
Selective Upper Thoracoplasty in Pulmonary Tuberculosis. N. W. Antelawa.—p. 200.

Serodiagnosis of Tuberculosis.—Dissmann and Dissmann-Wosak point out that the improvement of the flocculation reactions for syphilis and the observation that they are a manifestation of a reaction of antigen and antibody and thus a generally applicable immunity reaction led to the demonstration of the antibodies in the serum of tuberculous patients. Thus far it was generally the indirect method of the deviation of the complement that was employed. However, the especially purified and fractionated extracts of tubercle bacilli, which proved to be effective antigens in the complement fixation test, seemed to promise specific reactions in the flocculation system. The authors made various flocculation reactions on about 1,200 blood specimens from 480 patients with pulmonary tuberculosis, from thirty-six with other disorders and from 103 healthy persons. They employed (1) the Meinicke clarification reaction (II) with the especially prepared extracts as microreaction, as curvature reaction (accumulation of sediment in the bottom curvature of the test tube) and as centrifugation method; (2) the latter centrifugation method with the addition of the antigen according to Witebsky-Kuhn-Klingenstein, and (3) the complement fixation reaction according to Witebsky-Kuhn-Klingenstein. A comparison of the microreaction, the curvature reaction and the centrifugation method indicated that the curvature reaction in its second modification is the best method. It is advisable to perform the microreaction and the curvature reaction together. The strongest Meinicke antigen occasionally produces nonspecific reactions. The Witebsky-Kuhn-Klingenstein antigen with the standard clarification extract is of great value in the centrifugation method. Negative reactions have been observed in open, more or less extended forms of tuberculosis. Considerable changes in the disease process are accompanied by fluctuations in the intensity of the reactions. The authors think it probable that the occurrence of positive reactions in healthy persons may be the result of pulmonary infiltrates of short duration. They call attention to the differential diagnostic significance of seroreactions.

Ultra-Short Wave Therapy in Tuberculosis.—In preliminary experiments with ultrashort waves Schedtler gained the impression that the heat effect seems to be the chief factor in ultra-short wave therapy. He therefore resorted to it in tuberculous processes in which heat, hyperemization and anti-inflammatory measures were indicated. He treated fourteen patients, in whom pulmonary tuberculosis was complicated by dry pleurisy, with ultrashort waves of from 3.5 to 6 meters and obtained favorable results. Six cases of wet pleurisy, most of them of tuberculous etiology, were likewise treated with ultrashort waves. This treatment never produced prompt cessation of the exudation, but four refractory cases were led to resorption and adhesion, while in the two other cases the treatment remained ineffective. Three cases of tuberculous pleural empyema were not influenced by the treatment, while two patients who had nontuberculous pleural suppurations recovered. In fistulating glandular processes and in tuberculosis of the joints and bones, ultra-short wave therapy was given in addition to open air rest cure and to cod liver oil treatment. None of these cases showed a noticeable improvement as the result of the ultra-short wave therapy, which, however, proved highly effective in three cases of nonspecific chronic multiple arthritis. In four cases of tuberculous peritonitis, the ultrashort waves produced considerable improvement. The symptoms of intestinal tuberculosis likewise were favorably influenced. In view of the fact that patients with pulmonary tuberculosis are highly sensitive to all types of rays, the author was cautious in the application of ultrashort waves to these patients, and his observations justified this attitude. Convincing therapeutic effects were not produced. Summarizing, the author points out that ultra-short wave therapy seems to be justified within certain limitations. He was unable to demonstrate specific actions and thinks that this new form of ray therapy can be employed whenever intensive heating is desirable. This applies particularly to the various forms of pleurisy. The analgesic action of the ultrashort rays should be given further attention. In the author's observations on the effect of ultrashort waves in tuberculous processes of the larynx and of the eyes, thus far, he gained the impression that they promote the healing process, provided the general condition is good and the treatment is continued for a sufficient length of time.

Deutsche medizinische Wochenschrift, Leipzig

61: 741-780 (May 10) 1935. Partial Index

Water Exchange and Acid-Base Equilibrium. F. Hoff.—p. 741.
*Occurrence of Local Edema in Human Subjects. C. Ernst.—p. 745.
Borderline Condition of Epidemic Encephalitis. E. H. Romberg.—p. 747.
*Rhizomelic Spondylosis. H. Engel.—p. 752.

Local Edema.—On the basis of numerous experiments, Ernst reaches the conclusion that patients with vasoneurosis and hypertension have a tendency to local edema. He thinks the fact that the facial expression of such persons often changes rapidly from an enervated, prostrated expression to a condition of high turgor indicates the same. The site and intensity of the local edema is largely independent of hydrostatic conditions, but meteorologic and temperature changes as well as psychic changes in the patient exert an influence on the local edema. Thus the vasoneurotic diathesis is characterized not only by vascular anomalies but also by changes in the tissues. The author thinks that vasoneurosis has a causal connection with and creates a predisposition for a number of disorders, such as gastric ulcer, red hypertension, Raynaud's gangrene, ulcerous colitis, certain forms of asthma and some forms of cystitis. Moreover, vasoneurosis often concurs with certain types of glaucoma and with Ménière's syndrome.

Rhizomelic Spondylosis.—Engel reports a case of rhizomelic spondylosis in a man, aged 32. He considers the case worthy of attention because, after the man had been completely immobilized for nine years, the spinal column as well as the hip joints being ankylotic, he underwent an operation to enable him to sit up. Pseudo-arthroses were produced in the trochanter regions of both lower extremities with the result that the patient is able to sit up and use his arms and hands, for only one of the shoulder joints is slightly impaired in its motility.

Deutsche Zeitschrift für Chirurgie, Berlin

245: 1-92 (April 23) 1935. Partial Index

*Experimental Studies on Revival After Exsanguination. A. Winkelbauer.—p. 1.
Experimental Studies of Thrombosis. Ushiro.—p. 16.
Fever in Traumatic Fat Embolism. W. Rückert.—p. 36.
Neurinoma of Cervical Sympathetic. O. Diebold.—p. 58.

Revival After Exsanguination.—Winkelbauer removed a definite amount of blood from the femoral artery of a dog into a Percy tube, after which the blood was allowed to escape until the disappearance of the pulse and heart tones and the arrest of breathing. After a variable waiting period the blood was reinfused either into the jugular vein or into the carotid artery in the direction of the heart or of the brain or, by means of a glass canula, in both directions. The experiments were con-

trolled by graphic recording of the pulse, auscultatory control of the heart tones and the use of electrocardiograms. The mode of death from exsanguination was not always identical. It was caused by arrest of the heart, the respiration or the vasomotor center. The author took advantage of the preterminal pause, which could always be observed in the respirations or in the electrocardiogram, to estimate the waiting period before the beginning of reinfusion. This period varied from one half to twenty and one half minutes. The infusion into the arterial system proved to be more effective during this critical period than the infusion into the venous system. The clinical signs of death did not coincide with the suspension of the cardiac activity. Revival was still possible as long as the electrocardiogram showed traces of regulated cardiac action. When the electrocardiogram no longer recorded any traces of cardiac activity, revival was not possible. Out of forty experiments performed by the author on thirty-seven dogs, fifteen were successful in reviving the animal. A complete return to normal in the surviving animals took place after a few hours or days. The electrocardiogram indicated an impairment of the intraventricular conductivity. At times the electrocardiograms resembled those of coronary occlusion with signs of high grade fibrillation. The frequently observed heartblock was regarded as being due to asphyxia.

Klinische Wochenschrift, Berlin

14: 665-696 (May 11) 1935. Partial Index

*Influence of Muscular Activity on Blood Sugar and Blood Catalase. H. Koeppe.—p. 667.
*Carotene and Vitamin A Contents of Human Serum. E. Schneider and E. Widmann.—p. 670.
Cevitamic Acid and Blood Catalase. G. Török, M. Hedry and L. Neufeld.—p. 673.
*Curves of Serum Color Reaction in Pernicious and Simple Achylic Anemias. E. Schmehle and H. Schmid.—p. 675.

Influence of Muscular Activity on Blood Sugar.—Koeppe points out that catalase, as an oxidation ferment, plays an important part in metabolism. Numerous studies disclosed that the catalase content of the blood is influenced by many factors. The author found that the catalase content of the blood plays a part in the oxidation of the sugar. The relation between blood sugar and catalase was proved by the observation that the two are changed simultaneously, but in the opposite direction, by (1) the administration of carbohydrates, (2) hunger and (3) muscular activity. The dependence of the blood sugar content on the intake of carbohydrates and on hunger was known and has been given therapeutic consideration, but its dependence on muscular activity was not so well understood and consequently has not been given the attention it deserves. It is important in determining the so-called fasting blood sugar value, for, when the blood sugar is tested after the fasting person has had considerable muscular exercise, the value thus obtained is not the same as when the test is made immediately after awakening from a restful sleep. The author thinks that the simultaneous determination of the catalase values may eventually give a clearer insight into the relation between blood sugar and catalase and consequently information about the metabolism.

Carotene and Vitamin A Contents of Human Serum.—Schneider and Widmann show that carotene and vitamin A are present only in the serum, but not in the blood corpuscles. They discuss the methods for the determination of carotene and vitamin A. They observed that with increasing temperature more and more carotene is destroyed and they think that this observation has some significance for the cooking and baking process. They found also that with increasing age the carotene content of the serum increases while the vitamin A content decreases. The vitamin A content, particularly, describes a regular life curve. The authors think that, when a deficiency in vitamin A is studied this life curve should be taken into consideration. The deficiency in vitamin A, which becomes manifest in spite of a sufficient intake, is caused by a functional impairment of the liver. The vitamin A content is important in connection (1) with certain ophthalmic disturbances, (2) with the secondary thyrogenic impairment of the liver and (3) with infections. Little is as yet known about the mechanism of the vitamin A action in the organism. Some have been of the opinion that it catalyzes the oxidation processes in the liver, while others have maintained that it influences the glycolysis. The latter problem was investigated by several authors and some of them considered the formation of methylglyoxal as the essential factor in glycolysis. The authors likewise studied this problem and found that, if measured on the increase in methylglyoxal, the addition of carotene produces a slight increase in the glycolysis. Vitamin A alone effects no increase, while the combined administration of carotene and vitamin A produces a noticeable increase. Cevitamic acid exerted no influence on the glycolysis.

Color Reaction of the Serum in Pernicious Anemia.—Schmehle and Schmid determined with the step photometer in thirty normal serums the average normal curve of the color reaction of the serum. This average approximately corresponds to the curve most frequent in normal persons. The serum color index is considerably increased in severe cases of pernicious anemia and decreases rapidly under the influence of liver therapy. In patients in whom the color index reaches normal or subnormal values, the tendency to relapse is not so pronounced as in patients in whom the color index remains rather high in spite of normal erythrocyte values, for the high color index shows that there is still increased hemolysis. The authors discuss the color index in simple achylic anemia. They apply this term to a form of secondary anemia, accompanied by achylia or subacidity, which often exists for many years and has a blood picture that somewhat resembles chlorosis. The chief symptom is a disturbance in the gastric secretion caused by atrophy of the mucous membrane of the digestive tract. Thin and brittle nails are another sign of achylic anemia. The color index is low in achylic anemia, which indicates that it is not a hemolytic anemia, but it increases as the hemoglobin increases. The hemoglobin content can be increased by medication with reduced iron. Relapses are quite frequent in this form of anemia, but they never endanger the patient's life.

Medizinische Klinik, Berlin

31: 637-668 (May 17) 1935. Partial Index

Causes of Hardness of Hearing. M. Schwarz.—p. 637.
When Is Surgical Treatment Indicated in Disorders of the Biliary Tract? H. Finsterer.—p. 639.
Treatment and Prophylaxis of Diphtheria. C. Noetel.—p. 642.
Therapy of Pleuropulmonary Fistulas. A. Schick.—p. 647.
*Acceleration of Nylander's Sugar Reaction. G. Lepehne.—p. 649.

Nylander's Sugar Reaction.—Lepehne observed that the presence of lead acetate considerably accelerates Nylander's reaction. He found that, in a urine which had been clarified with lead acetate for the purpose of quantitative polarimetric examination, Nylander's test was completed within a short time. Further studies revealed that, if Nylander's reagent was saturated with lead acetate, the black precipitate developed much more rapidly than when ordinary Nylander's solution was used. In trying to find the optimal composition of the new reagent, the author observed that the alkalinity of Nylander's solution is reduced by the addition of lead acetate. In order to prevent a disturbance in the reaction in strongly acid urines because of the reduced alkalinity, he prepared Nylander's solution with a 12 per cent instead of a 10 per cent solution of sodium hydroxide, and he mixed one part of the reagent with one part of the urine. This solution with its increased alkali content is carefully heated; then, while it is heated again, small amounts of finely powdered lead acetate are added until the solution is hypersaturated. The opaque fluid is cleared by filtration. A sediment, which precipitates later, does not disturb the reaction. Overheating must be avoided in order to prevent the formation of lead oxide and the resulting yellow coloration of the solution or of the sediment. The author states that he worked with this modified Nylander reagent for several years and found it reliable. If this new reagent is used, the black sediment, indicative of the presence of sugar, appears after from one-half to one minute of boiling, while the original reagent required from three to four minutes or longer. A slight protein content of the urine or strong urobilin and indican contents do not interfere with the reaction. The author mentions several other investigators who suggested the use of lead acetate for the improvement of Nylander's reaction.

Zeitschrift f. d. ges. Neurol. u. Psychiatrie, Berlin

152: 451-616 (April 25) 1935. Partial Index

Third Artery of Red Nucleus. K. Stern.—p. 519.
Intraventricular Meningioma of Right Cornu Posterium. J. De Busscher.—p. 522.
*Aspects of Spinal Cord in "Cured" Funicular Myelitis. L. Bouman and M. Bielschowsky.—p. 538.
*Late Lesions of Human Brain Caused by Roentgen Rays. T. Markiewicz.—p. 548.

The Spinal Cord in a Case of "Cured" Funicular Myelitis.—Bouman and Bielschowsky report the history of a man who died of carcinoma of the stomach in 1934. In 1920 and 1921 he had had symptoms indicating the existence of pernicious anemia with involvement of the spinal cord. At that time the patient was given arsenic therapy. He recovered and was in good general condition for twelve years, blood changes as well as spinal symptoms being absent. The achlorhydria and the cerebral symptoms, which the patient developed toward the end of his life, were caused by the gastric carcinoma, for changes in the blood indicative of recurrence of the pernicious anemia were not evident. The histopathologic aspects of the spinal cord of this patient are noteworthy. On macroscopic observation, the transverse sections revealed nothing abnormal. Not until stains were applied to the medullary sheaths did changes become evident, which differed from those usually observed in funicular myelitis. A transverse section of the dorsal spinal cord did not disclose the gaps that are typical for funicular myelitis in the posterior, lateral or anterior columns, but the section did disclose characteristic spotted markings resulting from the confluence of smaller foci of medullary shadows and absorbing less of the hematoxylin of Weigert's stain. In these medullary shadows the normal number of axis cylinders was hardly reduced. They conclude from the histologic aspects of this spinal cord that the changes of funicular myelitis are largely reversible. They think that the organ preparations that exert a favorable influence on the blood picture of pernicious anemia should be given in much larger doses in cases in which the spinal cord is involved, for it is more difficult to influence funicular myelitis.

Late Roentgen Lesions of the Brain.—Markiewicz reports a case in which a man, aged 34, had paresthesias of the scalp, epileptic attacks of the Jackson type, amaurosis and paraplegia of the lower extremities five years after the first roentgen irradiation and one and one-half years after the last one, and a roentgen ulcer of the scalp in the occipital region a little later. The time that elapsed between the first and last irradiations and death was four and seven years, respectively. Anatomic studies disclosed multiple symmetrical necroses, some of which were hemorrhagic and most of which were in the cerebral medulla and almost exclusively in the occipital and parietal regions, at the site of the severest cutaneous changes. There also were signs of impairment of the interstitial tissues, and deposits of substances were found that greatly resembled the colloidal degeneration described by Alzheimer or the coagulation necrosis of Spielmeyer. However, in contradistinction to those authors, Markiewicz detected the vascular changes not only in the brain but also in the vessels of the pia. The changes observed in this patient correspond to those which Scholz produced by means of roentgen rays in animals, except that in the patient they were more advanced. There is a resemblance not only in that they are of circulatory origin but also in that the nervous parenchyma proved resistant to the roentgen rays. The changes in the patient supplement the observations made by Scholz in animals that it was possible to determine a reduced reactivity of the ectodermic as well as of the mesodermic interstitial tissues. Then there was a parallel process to the necroses; namely, extensive deposits of colloidal substances, which Scholz observed only in their beginning stages in and near the vessels. Whether the peculiar colloidal transformation of the vessels is the cause of the circulatory conditioned necroses cannot be definitely determined. At any rate, it appears that the deposits of colloidal masses themselves may later produce necrosis. The long latent stage between the application of the rays and the manifestation of the clinical signs is known from roentgen injuries of other organs, particularly those of the skin.

Zeitschrift für Tuberkulose, Leipzig

73: 1-80 (May) 1935

Significance of Deviation of the Complement According to Witebsky, Klingenstein, Kuhn for Diagnosis and Prognosis of Pulmonary Tuberculosis. F. Schütz.—p. 1.
Experiences with Meinicke's Seroreaction for Tuberculosis. K. Zech.—p. 16.
Significance of Determination of Sodium Chloride in Sputum. O. Zorn.—p. 21.
*Pneumothorax Pleurisy and Simple and Effective Method of Preventing It. I. Petrin.—p. 31.

Method of Preventing Pneumothorax Pleurisy.—Petrin introduced from 2 to 4 cc. of sterile olive oil into the pleural cavity of rabbits and then injected air, in quantities from 80 to 150 cc., at intervals of from seven to ten days. When oil was not introduced, exudates resulted, while, if oil was introduced, the pneumothorax became complete and the pleura showed thickening but there was no exudate. Examination of the thickened pleurae disclosed inflammatory granulation in the course of becoming fibrous; that is, there exists a fibrous pleuritis in which the reparative process (granulation tissue) predominates over the alterative and exudative processes. Encouraged by the effects of oil injections in animals, the injection of oil was employed in 105 patients. At the second and third refilling of the pneumothorax, from 2 to 4 cc. of sterile olive oil is introduced into the pleural cavity by introducing the oil through the pneumothorax needle by means of a syringe. The majority of patients complained of severe thoracic pain on the day the oil was introduced and many had a considerable rise in temperature. Roentgenoscopy disclosed that a sinus exudate developed in all patients, and in four it rose to the dome of the diaphragm. However, after about two weeks the exudate had become resorbed. A high exudate that necessitated a puncture or the premature interruption of the pneumothorax did not develop in any of the cases. A pneumothorax should never be made complete at once, but only fifteen days after the introduction of the oil. The author concludes that the clinical and experimental results of the endopleural oil injection justify a wide application of this treatment.

Zeitschrift für Krebsforschung, Berlin

42: 1-92 (May 8) 1935. Partial Index

Therapeutic Experiments with Ferments in Experimental Tumors in Rats. Berta Ottenstein and S. von Pastinszky.—p. 1.
Aerobic Glycolysis of Blood Corpuscles in Patients with Tumor. R. Indovina and W. Fabisch.—p. 63.
*Kaposi's Disease as Systematized Angiomatosis. F. J. Lang and L. Haslhofer.—p. 68.
*Experimental Studies on Problem of Tobacco and Cancer. O. Schürch and A. Winterstein.—p. 76.

Kaposi's Disease as Systematized Angiomatosis.—Lang and Haslhofer point out that the opinions about the nature of the disorder designated by Kaposi as sarcoma idiopathium multiplex pigmentosum are still divided. The authors think that the different opinions about the nature of Kaposi's disease are due to the extraordinary manifold microscopic aspects presented by the disease. They observed two cases of Kaposi's disease. They point out that the tissue changes consist in sprouting and dilatation of the capillaries, hemorrhages and proliferation of the connective tissue cells. These changes are accompanied by pigment formation. The disorder involves primarily the corium and, occasionally, the subcutaneous connective tissue, whereas the epidermis is only secondarily involved. The authors describe the histologic aspects and reproduce photomicrographs. The tissue changes of the internal organs that may be involved correspond to those of the skin. In regard to the pathogenesis most investigators seem to agree that the Kaposi "sarcoma" is due to vascular changes. Authors, who considered the condition tumorous called attention to the microscopic structure and to the apparent metastatization. Other investigators, however, cited factors that contradict the sarcoma nature of Kaposi's disease. The authors themselves reach the conclusion that Kaposi's disease is a systematized hemangiomatosis and consider the later developing spindle-cell nodules transformations and retrogressive forms of vascular tumors, which finally end in complete cure. That the disorder is a hemangiomatosis is proved not only by the clinical aspects but also by the fact that angiomatous formations often have a multiplicity of first traces. This latter factor

disproves the metastatic nature of the changes in the internal organs. The spontaneous recovery from the vascular tumors is another factor that contradicts the sarcomatous nature.

Tobacco and Cancer.—Schürch and Winterstein analyzed tobacco tar and found that it is free from polycyclic, aromatic hydrocarbons. The cancer-producing hydrocarbons that are found in coal tar are lacking in tobacco tar. The authors tested the cancerigenic action of tobacco tar on the skin and mucous membranes of mice and rabbits. They found that painting with tobacco tar, either alone or in connection with mechanical or thermic irritation, does not produce carcinoma. The various fractions of tobacco tar likewise proved to be free from cancerigenic action. In rabbits the general condition of which had been impaired by a high cholesterol diet and by application of coal tar, it was possible to produce tar warts and carcinoma by means of tobacco tar. The authors conclude that tobacco tar is a factor in the pathogenesis of cancer only in case a predisposition exists.

Zentralblatt für Chirurgie, Leipzig

62: 1329-1392 (June 8) 1935

*Elimination of Intercostal Nerves After the Method of Leotta in the Treatment of Pulmonary Tuberculosis. F. Rabboni.—p. 1330.
Evipan Sodium in Local Anesthesia. H. Kirchner.—p. 1337.
Treatment of Hirschsprung's Diseases in Childhood. F. Niklas.—p. 1338.
Melorheostosis. E. Michalowsik.—p. 1344.
Diagnosis of Loose Bodies in Elbow Joint. J. Oberholzer.—p. 1348.
Vasectomy. H. Stiasny.—p. 1351.

Alcoholization of Intercostal Nerves in Treatment of Pulmonary Tuberculosis.—According to Rabboni, Leotta's method of restricting the respiratory excursion consists in injecting 2 cc. of 95 per cent alcohol into the intercostal nerve. To accomplish the desired effect, Leotta injects four intercostal nerves on both sides. The technic is simple and certain if the needle is introduced into the triangular space Leotta designates as the costopleural triangle. To avoid pain, 0.5 cc. of 4 per cent procaine hydrochloride solution is injected before the alcohol is introduced. The treatment results in diminishing the sensitivity of the skin, immobility of the ribs and a diminution of the respiratory excursion accompanied by a lowering of spirometric values and of the vital capacity. The author feels that this condition must be maintained, regardless of the type of tuberculosis, for not less than two years. The return of rib mobility is recognized by a return to normal vital capacity and by fluoroscopic examination. Injection of the nerves is to be repeated as a rule after from three to four months. It is not necessary to combine this with any other method of collapse therapy. The advantages of the method are that the pleura is not harmed, a complete anatomic and functional restitution takes place, and it is free from any danger. The method is indicated whenever pleural adhesions make it impossible to induce a pneumothorax and when bilateral immobilization is desirable. It is particularly successful in cases presenting fibrous induration. The author further advises it for hemoptysis that is difficult to arrest.

Zentralblatt für Gynäkologie, Leipzig

59: 1025-1088 (May 4) 1935

Aspects of Hyperventilation During Pregnancy and Puerperium. D. Adlersberg and E. Klaften.—p. 1026.
Drastic Example for Efficiency of Colposcopy. O. Bandilla.—p. 1039.
Supravaginal Amputation of Uterus in Puerperal Sepsis. F. C. Hilgenberg.—p. 1045.
*Diagnostic and Prognostic Significance of Aschheim-Zondek Reaction in Cystic Mole and Chorionepithelioma. R. Koehler.—p. 1049.
Simultaneous Intra-Uterine and Extra-Uterine Pregnancy. A. Katz.—p. 1054.

Aschheim-Zondek Reaction in Chorionepithelioma.—According to Koehler, the Aschheim-Zondek reaction is of greater significance in the diagnosis of cystic mole and of chorionepithelioma than in the diagnosis of pregnancy. He concedes that the positive Aschheim-Zondek reaction as such is no help in the recognition of the presence of a degenerated ovum, for its positive outcome indicates only the presence of active chorial tissue. In case of degenerative processes on the ovum, that is, in case of cystic mole, the hormone content is considerably greater, in that each cubic centimeter contains from 250 to 500 mouse units, compared to from 20 to 30 mouse units in normal pregnancy. The assumption of a malignant degeneration, in the absence of other symptoms, is justified if a positive Aschheim-Zondek reaction persists two or three weeks after the discharge of an apparently normal ovum or from sixty to ninety days after the expulsion of a cystic mole. However, hemorrhages will generally suggest the malignant degeneration of an ovum, even before this period has elapsed. If, following the expulsion of a normal ovum or of one with cystic degeneration, the Aschheim-Zondek reaction again becomes positive after having been negative, malignant degeneration is likely, particularly if there are hemorrhages. For this reason, the Aschheim-Zondek reaction must be repeated at least every month in every case of cystic mole, so as not to miss the best time for the treatment of chorionepithelioma. The author gives the clinical history of a case of cystic mole, in which the suspicion of a chorionepithelioma was supported by the outcome of the Aschheim-Zondek test and in which it was corroborated by the total extirpation of the uterus, without previous exploratory curettage. However, he reports another case in which the erroneous outcome of the Aschheim-Zondek test was taken as an indication of a radical therapeutic procedure (total extirpation of the uterus in a young woman), which would not have been done had the Aschheim-Zondek test not failed in this case.

Sovetskaya Vrachebnaya Gazeta, Leningrad

April 30 (No. 8) pp. 601-680, 1935. Partial Index

*Rôle of Allergic State of a Childish Organism in Predisposition to Scarlet Fever. E. Yu. Gen and E. V. Skrotskiy.—p. 613.
Anginas of Alimentary Origin. S. I. Ratner, V. I. Avtonomoy, V. I. Rabinovich and S. S. Rotenburg.—p. 616.
Treatment of Erysipelas with Sodium Bicarbonate. V. V. Gerbst and V. P. Skulgina.—p. 621.
*Antivirus Prophylaxis of Grip. E. E. Shtaynshnayder and T. S. Yakobson.—p. 623.

Relation of Allergic State to Predisposition to Scarlet Fever.—Gen and Skrotskiy used the Dick test as the criterion for predisposition to scarlet fever and the intradermal injection of 1 per cent watery solution of Witte's peptone as a test of the allergic state of the organism. Observations were carried out on 516 children ranging in age from 3 to 8 years. Two-tenths cubic centimeter of the solution of peptone was injected intradermally into one arm, while simultaneously the Dick test was applied to the other. The authors found that the reactions of the two are quite similar in their manifestations (redness, swelling, pain) and in the time of appearance and disappearance. They ran a parallel course in 70 per cent of the cases. While 53 per cent of the healthy children reacted positively to the injection of peptone, only 4 per cent of those convalescing from scarlet fever reacted positively. Apparently scarlet fever desensitizes the organism to a nonspecific allergen. The same convalescing children reacted to the Dick test in 14 per cent of the tests. The authors conclude that the allergic state in children acts as a predisposing factor to scarlet fever. Their results favor the allergic character of the Dick reaction and the significance of the allergic factor in the pathogenesis of scarlet fever.

Antivirus Prophylaxis of Grip.—Shtaynshnayder and Yakobson report mass vaccinations against grip. The method consisted of touching up the throats twice daily for two or three days with a grip antivirus prepared at the Metchnikov Institute and consisting of four parts of Pfeifer bacillus antivirus, two of pneumococcus antivirus, three of streptococcus antivirus and one of Neisseria catarrhalis antivirus. The first vaccination was carried out during October and November 1933, on some 5,000 workers in several machine plants. A second vaccination experiment was carried out during an epidemic flare up in February 1934. A number of controls were not vaccinated. The morbidity from grip during the first month among those vaccinated was 1.1 per cent and 2.8 per cent among the controls, during the second month 2.1 among those vaccinated and 3.7 among the controls and during the third month, 2.7 and 2.8, respectively. In the second experiment 1,123 workers were submitted to the antivirus treatment, while 1,276 acted as controls. The morbidity percentages were 6.5 in the treated group and 12.5 in the controls. The authors conclude that grip antivirus is an effec-

tive prophylactic agent in endemic and epidemic grip. The duration of the immunity is not less than one month. Vaccination reduces the incidence of grip to one half. The course of the illness in the vaccinated is shorter. The antivirus may be administered by the method of local application to the pharynx or nose.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

79: 2323-2422 (May 18) 1935

Gastric Perforation. A. Kummer.—p. 2324.
Hypnosis with Aid of Evipan in Polyclinical Patients. T. A. Kandou.—p. 2330.
*Hypophyseal Reaction in Tuberculosis. L. Koster and P. A. Heeres.—p. 2336.
Etiology and Treatment of Respiratory Asthma. G. F. Gezelle Meerburg.—p. 2348.

Hypophyseal Reaction in Tuberculosis.—Koster and Heeres describe a syndrome occurring in tuberculosis which they consider due to a hyperfunction of the hypophysis. The clinical picture has much in common with hyperpituitarism and with hyperadrenalinism. It consists in moderate obesity, rapid growth of body weight, hyperthermia, erythremia, hypertension, hyperglycemia and glycosuria, purplish red striae on the abdomen, thighs and upper arms, moderate increase in the cholesterol content of the blood, marked increase in the basal metabolic rate, genital anomalies, falling out of hair, moon face and slight kyphosis. The subjective symptoms resulting from the tuberculous changes are pains in the back, shooting pains in the arms and legs, constant fatigue at the slightest effort, headache and vertigo. The author treated six patients, three of whom developed the symptoms after previous treatment for tuberculosis, while the others showed such symptoms in the course of an acute pleural process. No conclusions regarding prognosis were reached.

Acta Medica Scandinavica, Stockholm

85: 221-418 (May 6) 1935. Partial Index

*Potassium Content of Blood Serum During Fever. Liselotte Kallós-Deffner.—p. 221.
Examination of Hepatic Function in Patients with Acute Febrile Disorders. K. Bröchner-Mortensen.—p. 229.
Several Interesting Cases of Cerebral Tumor from Point of View of Differential Diagnosis. S. Eckerström.—p. 244.
*Clinical and Serotherapeutic Studies on Preparalytic Stages of Poliomyelitis on Basis of Experience During Epidemic in Skive District in 1933. S. Baastrup.—p. 262.
Determination of Cholesterol in Blood. G. Teilum.—p. 316.
*Uremia as Cause of Death in Massive Hemorrhage from Peptic Ulcer. T. Christiansen.—p. 333.

Potassium Content of Blood Serum During Fever.—Kallós-Deffner calls attention to a paper in which Cloetta demonstrated the unreliability of the methods recommended for the demonstration of the potassium content of the blood serum and in which a new method was described. Since Cloetta's method requires an expensive apparatus, the author simplified it somewhat. Her method is a moist incineration by means of sulphuric acid. The incineration is repeated from three to five times until the remaining ash is white and no longer has an acid odor. The ash is combined with distilled water and the potassium content is then determined according to the method of Jendrassik and Szél. In tests on normal persons the author found that the potassium values vary in different persons, but she gained the impression that the normal values fluctuate between 16.8 and 21.45 mg. per hundred cubic centimeters. She also made tests on patients with fever and found that the potassium content of the blood serum was greatly increased during fever and decreased again after it subsided. Experiments on rabbits disclosed that, if fever is produced in normal animals, the potassium content of the blood serum becomes considerably increased. After the fever subsides, the potassium content becomes normal again, or it may even go below the initial value.

Studies on Poliomyelitis.—Baastrup observed 120 hospital cases of poliomyelitis. The disease can usually be diagnosed during the preparalytic stage solely from the clinical symptoms, but the spinal fluid tests, especially those which determine the number of cells, and the albumin and globulin, are helpful. In discussing the differential diagnosis, he gives particular attention to the disorders which may present similar symptoms or meningeal symptoms: influenza, encephalitis, and tuberculous, purulent or serous meningitis. He calls attention to the similarity between preparalytic poliomyelitis and so-called benign idiopathic serous meningitis and suggests that probably some of the cases that are diagnosed as serous meningitis are really sporadic cases of preparalytic poliomyelitis. He warns against attaching too much differential diagnostic importance to the sugar determination in the spinal fluid. He criticizes the practical value of the usual measures taken to combat epidemics and discusses serum therapy. This therapy presupposes that in the beginning poliomyelitis is a general infection, which later on, in the preparalytic stage, betrays a tendency to advance toward the central nervous system. The experiments with monkeys merely argue in favor of a possible prophylactic effect on the paresis, but not a curative effect. Once the paresis is present, serum therapy seems to be useless. Of the patients observed by the author, thirty-two received this therapy, ten were treated with horse serum and twenty-two with convalescent serum. The horse serum had no effect whatever. It could not be established definitively that convalescent serum had a prophylactic effect against paresis, nor could it, on the other hand, be shown that it did not. Nevertheless, according to the observation of the author and a few other investigators, convalescent serum seems to influence the general condition in some cases, and the author thinks that this form of therapy deserves further trials. He suggests the alternate intravenous and intramuscular injection as the best method of administration of convalescent serum.

Cause of Death in Peptic Ulcer.—Christiansen's report is based on twenty-one fatal cases of massive hemorrhage in peptic ulcer. Necropsy was done in sixteen of these cases, and in twelve cases it revealed erosion of fairly large arteries. The time that elapsed from the beginning of the hemorrhage until death varied between three and thirty days. As it is hardly possible that a patient may live for any number of hours with a continual arterial hemorrhage, it seems reasonable to conclude that the hemorrhage must have stopped sometime before death and, consequently, that the hemorrhage could not have been the cause of death in the strictest sense of the term. This applies in particular to the cases which might be designated as "late" deaths. In some of these cases, complicating and intercurrent disorders (perforation, pneumonia, embolism) may have constituted the cause of death. In a majority of the cases, however, the fatal outcome resulted from general exhaustion. This condition is characterized more by symptoms of intoxication than by symptoms of true anemia, and even in those cases in which arterial erosion could be demonstrated on necropsy the hemorrhage presumably had ceased sometime before death. The hypothesis is set forth that this general exhaustion is a condition of extrarenal hyperazotemia, which may be preceded and accompanied by achloruria, and that this condition may be treated successfully by the administration of sodium chloride. In contrast to other forms of uremia of gastrogenic origin, uremia associated with massive hemorrhage in peptic ulcer develops insidiously and without vomiting. The theory is advanced that in these cases the hyperazotemia is a symptom of intoxication arising from absorption of toxic substances that are formed by bacterial decomposition of the blood stagnating in the intestinal canal; this intoxication is further aggravated by demineralization from excessive flushing of the organism by water.

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IV. Experimental Investigations on Influence of Estrogenic Substance and Corpus Luteum Extract on Mammae of Adult Guinea-Pigs on Daily Administration, Partly of Small Doses for Several Months, Partly of Large Doses in Course of Two and One Half Months. E. Dahl-Iversen.—p. 393.
*Lipase Activity in Preparations of Dried Stomach Substance from Fields of Cardia, Fundus and Pylorus Glands, Respectively. E. Meulengracht, E. Schiødt and A. Eldahl.—p. 408.

Lipase Activity in Dried Stomach Substance.—Meulengracht and his associates found that the lipase activity of preparations from the cardiac portion of the stomach of swine was somewhat greater than that of the preparations from the fundous and pyloric portions, a difference which they ascribe to the relatively greater amounts of interstitial tissue in the cardia.